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Relationship Pursuit and Sociosexuality in a Time × Investment Model of Mating Strategies

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Relationship Pursuit and Sociosexuality in a Time × Investment Model of Mating Strategies

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Dedication

This work is dedicated to my partner, Christina Bishop-Wilkey. Her love gives me the broader perspective necessary for good science.

This work is also dedicated to those seeking love, no matter what the strategy.

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Relationship Pursuit and Sociosexuality in a Time × Investment Model of Mating Strategies

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Sociosexuality (Kinsey, Pomeroy, & Martin, 1948; Kinsey Pomeroy, Martin & Gebhard, 1951) indicates the extent to which individuals are willing to engage in sex outside of a committed relationship. Mating psychology consistently uses this construct to measure an individual's pursuit of short-term mating strategies (Buss & Schmitt, 1993). However, some work conceptualizes short-term relationships as those marked by brevity (Jonason, Li, Webster, & Schmitt, 2008) and other work conceptualizes short-term relationships as those marked by low amounts of investment in a partner (Gangestad & Simpson, 2000a). Though time and investment are undoubtedly related to one another, this work examines the effect of sociosexuality on mating pursuit by experimentally manipulating time and investment to predict three patterns of possible results: Exclusively short-term relationship pursuit, exclusively low investment relationship pursuit, or general/open relationship pursuit.

Four studies measure individuals' sociosexual orientation and ask participants to rate the future possibility of relationships (i.e., time orientation – short-term vs. long-term) and the resources committed to a relationship (i.e., investment orientation – low vs. high resource investment). Study 1 examines the association of sociosexuality, time, and

investment for those currently in relationships and those considering previous relationships; as well, Study 1 examines sociosexuality's association on different relationship centered variables such as satisfaction and commitment. In Studies 2 and 3, time and investment are experimentally manipulated to create relationship descriptions; participants' sociosexual orientations are then used to predict the endorsement, incidence, and frequency of these relationship descriptions. Studies 2 and 3 also examine how the manipulation time and investment contribute to the evaluation and endorsement of the relationship descriptions. Finally, Study 4 uses self-report and behavioral measures to examine how sociosexuality relates to openness and flexibility of relationship pursuit using a confederate design.

Results support the third, more general/open pattern of relationship pursuit. Results suggest that unrestricted individuals are more flexible and likely to pursue the most available mating strategy, rather than one marked by a specific amount of time or investment. Additionally, time and investment are found to contribute separately to the evaluation and endorsement of the relationship descriptions.

Table of Contents

List of Tables

Background

Individual differences in mating psychology can influence the kinds of relationships a person may pursue. Notably, Kinsey and colleagues introduced sociosexuality (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin & Gebhard, 1953) as a measure of individuals' willingness to engage in sex outside of a committed relationship; since then, work with sociosexuality has focused on how those with unrestricted orientations (i.e., higher sociosexuality) are more interested in short-term mating than those with restricted orientations (i.e., lower sociosexuality; Simpson & Gangestad, 1991). As a result, unrestricted sociosexuality has become synonymous with short-term mating pursuit (i.e., temporally short relationships; Jackson & Kirkpatrick, 2007; Putz, Gaulin, Porter, & McBurney, 2004; Schmitt, 2005; Simpson, Gangestad, & Biek, 1993). Unrestricted individuals report engaging in sex on one and only one occasion (e.g., a one-night stand; Simpson & Gangestad, 1991) and being willing to engage in a sexual relationship after a shorter amount of time across 48 different cultures (Schmitt, 2005) than restricted individuals. Unrestricted individuals also view infidelity as more acceptable than restricted individuals (Feldman & Cauffman, 1999). Sociosexuality is an almost ubiquitous measure across the discipline of mating psychology; a search of Google Scholar indicates that the Simpson and Gangestad's (1991) and Penke and Asendorpf's (2008) seminal papers on the topic have be cited almost 1,500 times combined.

The association of sociosexuality and mating strategy may be more complex than originally posited, though. In some research, sociosexuality serves as proxy for low-investment mating (i.e., lower amounts of commitment to a partner; Arnocky, Woodruff, & Schmitt, 2016; Penke & Asendorpf, 2008; Simpson, Wilson, & Winterheld, 2004). Short-term and low-investment mating are no doubt similar to each other, but it is theoretically possible for a low-investment relationship to last a considerable amount of time (e.g., a person having an affair with the same person over the course of years; Perper & Cornog, 2000). Additionally, some research has revealed an association of sociosexuality with long-term relationships (Penke & Asendorpf, 2008); individuals with an unrestricted sociosexual orientation reported more long-term relationships than those with restricted sociosexual orientation which seems to counter the prevailing view that unrestricted sociosexual orientation promotes short-term mating. Inspired by this apparent inconsistency, this research clarifies how sociosexuality affects mating pursuits by exploring individuals' interest in and actual pursuit of mateships and by deconstructing mateships into the components of time and investment. Specifically, this dissertation examines sociosexuality by exploring how it relates to the dimensions of Time (i.e., one's ability to project oneself and a mate into the future) and Investment (i.e., one's ability to predict the amount of resources one may invest in a relationship) as well as how Time and Investment relate to one another.

How Humans Mate

Reproduction in humans consists of two effortful processes. Mating effort is the use of time and resources to attract and copulate with a partner, and parenting effort is the use of time and resources to invest in a partner and raise offspring (Trivers, 1972). Scholars categorize mating relationships along a dimension that ranges from short-term to long-term depending upon the kind of effort a partner expends. When people mate in the short-term, they expend mating effort to attract new mates and attempt to increase their fitness by reproducing with many different individuals. When people mate in the long-term, they expend parenting effort to maintain the mateship and raise any offspring to reproductive age.

Humans have a finite amount of energy to spend, though, on acquiring mates, procuring food, or rearing offspring, and energy use is a zero-sum game (i.e., effort used to mate cannot be used to parent offspring). Therefore, in order for humans to get the best return on their energy investments, it must be spent efficiently; for example, it is a better use of energy to pursue mates who reciprocate your attraction than mates who do not. Thus, mating is likely to be strategic (Buss & Schmitt, 1993). Humans tend to pursue the mating strategy most likely to increase fitness, and these strategies may be oriented toward the short-term or long-term; that is, some may find more mating success seeking one-night stands while others find success in establishing traditional romantic relationships. Others find more success with a combination of the two (i.e., a mixed strategy; Gangestad & Simpson, 2000a), such as when an individual in a long-term relationship (e.g., marriage) shifts effort away from his/her partner and offspring in order

to pursue extra-pair partners (Pillsworth & Haselton, 2006). While people use a blend of these strategies throughout their lives, some may be more adept at enacting one type of strategy over another (i.e., Strategic Pluralism; Gangestad & Simpson, 2000a).

Mating strategies can be influenced by any number of factors including biological sex (Buss & Schmitt, 1993), personality (Simpson & Gangestad, 1991), and the environment in which one was raised (Simpson, Griskevicius, Kuo, Sun, & Collins, 2012). Men, for example, traditionally pursue short-term mating strategies more than women because a man's initial investment in a relationship can be far less costly (i.e., an act of sex) than a woman's (i.e., the same act of sex and nine months of child-bearing; Buss & Schmitt, 1993; Trivers, 1972). Men, in these cases, primarily expend mating effort whereas women expend mating effort but also expend at least nine months of parenting effort, reducing the available energy for other tasks including mating. Importantly, traits, such as sociosexuality, can also guide mating strategies; those with unrestricted sociosexuality engage in sexual relationships with little to no commitment more than those with restricted sociosexuality (Simpson & Gangestad, 1991). Additionally, research drawing from Life History Theory finds that those who have unpredictable early childhood environments will be more likely to enact a fast life history strategy, which means they take advantage of opportunities that are only available at the present moment (i.e., the reward is immediate). Short-term mating offers immediate rewards, and people with unpredictable childhoods may find these rewards more appealing than the rewards associated with the longer-term expenditure of parenting effort.

WHAT DOES IT MEAN TO MATE IN THE SHORT OR LONG-TERM?

As implied in the commonly used short vs long-term shorthand, reproductive efforts can be expended over a short or a long period of time. Moreover, these efforts can also involve a small or great amount of investment. That is, mating effort typically requires very little time and little to no investment in a partner, whereas parenting effort typically requires a great deal of time and substantial resource investment in a partner and offspring. However, time and investment are not the same variable, though they are undoubtedly related. In fact, the ability to project oneself into the future (i.e., a time-orientation) is an entirely separate mental adaptation (Eastwick, 2009; Leary & Buttermore, 2003; Suddendorf & Busby, 2003) from the ability to invest in a romantic partner. Both dimensions are used in the mating literature, but very few lines of research specify which variable (i.e., time or investment) is the defining characteristic of a particular relationship. Critical to the current work, it remains unclear if those with an unrestricted sociosexual orientation pursue mateships defined by brevity or by low investment. I examine why it is wise to consider both time and investment as defining characteristics of any potential or established mating relationship.

It may be that the dimension underlying the short vs. long-term shorthand is, as the label implies, fundamentally concerned with the temporal nature of the mating relationship. Research that focuses on the timing of short-term relationships often highlights the fleeting nature of some mating opportunities and how those more oriented toward shorter-term relationships can capitalize on such opportunities. Buss and Schmitt (1993) report that men, who endorse short-term mating more than women, are more

likely than women to agree to have sex with a person they have only known for spans as short as a week, a day, or an hour. Additionally, short-term strategies are effective because the time between the act and the reward is brief. For example, those with fast life history strategies report more partners over their lifetimes presumably because their unpredictable early childhood environments encouraged the immediate use of resources (i.e., inability to delay gratification; Simpson et al., 2012). Also, individuals who are higher in the Dark Triad traits (i.e., Machiavellianism, Narcissim, and Psychopathy; Jonason, Li, Webster, & Schmitt, 2008) are more likely to pursue short-term mates; these traits orient these individuals toward the opportunistic, sometimes manipulative mating strategies that result in instant gratification in lieu of commitment-defined relationships.

However, it is also possible that the level of investment is the defining aspect of mating relationships, not the duration of their existence. Low investment relationships that only consist of an act of copulation end rather quickly. However, if the partners in a low investment relationship continue to only have sex with one another into the future (i.e., the only investment is the act of copulation across a long period of time), then this relationship stretches into the long-term but is of considerably lower investment compared to a "traditional" long-term relationship. In a critique of Strategic Pluralism Theory (Gangestad & Simpson, 2000a), Perper and Cornog (2000) give the example of a married woman who has an affair with the same man over the course of years; her brief sexual acts with her lover seem like a short-term relationship, as only sex is involved, but this relationship can persist for as long as the woman's marriage. In response, Gangestad and Simpson (2000b) replied that low vs. high investment is a more accurate way than

short-term versus long-term to describe the tradeoff between mating and parenting effort. Pillsworth and Haselton's (2006) work on dual mating strategies exemplifies this perspective; the dual mating hypothesis states that women are likely to maintain a bond with a partner who will, in turn, invest in their offspring, but women might also pursue sexual relationships with men who invest only their genetic material. In other words, it is the amount of investment, not time, that differentiates the two strategies highlighted by the dual mating strategies hypothesis. In summary, the labels of short and long-term have been used to refer to both the duration of a relationship as well as the level of investment.

Time orientation and investment are very likely related to each other, though. In fact, time is generally considered a resource one could invest in a relationship. However, these variables deserve deconstruction to better understand relationship pursuit. One may invest his/her time in a relationship in the present, but predicting the future of one's relationship may provide a unique opportunity to evaluate separately the amount of expected investment. That is, one's expectations of the length of a relationshipmay not necessitate a certain level of investment (i.e., it is possible to expect to maintain a low investment relationship for a long time or expect that a committed relationship will end quickly), and the ability to consider the two separately may be especially relevant to those considering potential relationships compared to those currently in established relationships. Moreover, social psychology, and in particular relationship science, has a long history of separating highly related constructs to better understand the psychological mechanisms underlying behavior.

Separating highly related constructs has allowed researchers to capture and examine relationships that may occur rarely but would be otherwise unnoticed without a higher level of theoretical and conceptual precision. Interdependence Theory, for example, posits that individuals evaluate relationships based on their level of outcomes (i.e., current rewards and costs of the relationship), their comparison level (i.e., their expectations for a relationship), and their comparison level for alternatives (i.e., the expected outcomes of other possible relationships; Thibaut & Kelly, 1959). Relationship satisfaction is a comparison of individuals' outcomes to their comparison level; outcomes can exceed or fail to meet a comparison level, creating either a satisfying or unsatisfying relationship. Relationship dependence is a comparison of individuals' outcomes to the comparison level for alternatives; if outcomes fail to meet the comparison level for alternatives (i.e., better outcomes could be had elsewhere) the relationship has low dependency and vice versa. These comparisons have allowed scholars to depict four "types" of relationships: voluntary dependence (i.e., high satisfaction and high dependence), involuntary dependence (i.e., low satisfaction and high dependence), happy and free (i.e., high satisfaction and low dependence), and one unlikely to persist (i.e., low satisfaction and low dependence; Miller, 2011; Rusbult & Buunk, 1993). Two of these relationships (i.e., happy and free and involuntary dependence) would be considered uncommon or less likely to occur naturally. This is likely because satisfaction is highly correlated with dependence (Drigotas & Rusbult, 1992; Hall & Baym, 2011; Rusbult, Martz & Agnew, 1998). That is, satisfaction and dependence measure different effects, but share a common component (i.e., relationship outcomes). The field has gained much

insight by decoupling individuals' satisfaction from dependence, though; for example, this distinction informed Johnson's examination of the tripartite nature of commitment in marriages (i.e., personal, moral, and structural commitment; Johnson, 1991; Johnson, Caughlin, & Huston, 1999). Similarly, decoupling the expectation of future connection from the level of resource investment may provide new understanding of the strategic mating decisions of both people considering potential relationships and those currently in relationships.

SOCIOSEXUALITY & MATING STRATEGIES

Sociosexuality, as an individual difference that predicts mating strategies, provides an excellent vehicle with which to explore the tradeoffs of time and investment. Sociosexuality is the extent to which a person is willing to engage in sex outside of a committed, long-term romantic relationship (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin & Gebhard, 1953; Penke & Asendorpf, 2008; Simpson & Gangestad, 1991). The Sociosexuality Inventory and the revised inventory (SOI and SOI-R) ask participants the extent to which they engage in and endorse sexual relationships defined by a brief duration (e.g., "With how many different partners have you had sexual intercourse on one and only one occasion;" Simpson & Gangestad, 1991; Penke & Asendorpf, 2008). Higher scores on the SOI indicate an unrestricted sociosexual orientation (SO); an unrestricted orientation, compared to a restricted orientation, is associated with both higher number of sexual partners and extra-pair sexual partners (Penke & Asendorpf, 2008) and lower feelings of commitment toward romantic partners

(Jones, 1998). Additionally, unrestricted individuals are more likely than restricted individuals to act flirtatiously with an interviewer (as rated by blind observers; Simpson, Gangestad, & Biek, 1993). Overall, unrestricted sociosexuality is consistently associated with more expenditure of mating effort than restricted sociosexuality (Gangestad & Simpson, 2000a). As a point of clarification, though, sociosexuality is associated primarily with mating pursuits, not attraction processes. In fact, sociosexuality has shown no association with desire for opposite-sex partners in experimental settings (Asendorpf, Penke, & Back, 2011; Simpson, Gangestad, & Biek, 1993).

Sociosexuality may be associated with short-term relationships (as measured with the SOI item "With how many different partners have you had sexual intercourse on one and only one occasions?"). Indeed, some previous work on sociosexuality has treated it synonymously with short-term mating (Fletcher, Simpson, Campbell, and Overall, 2013); for example, Simpson and Gangestad (1991) found a significant negative correlation of participant SO with the length of a relationship before engaging in intercourse and a positive correlation with one-night stands. Penke & Asendorpf (2008) also demonstrated correlations between sociosexuality and short-term mating orientations; that is, unrestricted individuals, as compared to restricted individuals, reported higher willingness to have sex with a person after knowing them for short amount of time.

However, some previous work on sociosexuality operationalizes the construct as interest in low-investment mating strategies (as measured with the SOI item "I can imagine myself being comfortable and enjoying casual sex with different partners."). Jones (1998) found that sociosexuality negatively predicts feelings of commitment to a

current partner (i.e., lower investment), and a number of other scholars simply refer to sociosexuality as an endorsement of uncommitted or low-investment mating (Li & Kenrick, 2006; Lukaszewski, Larson, Gildersleeve, Roney & Haselton, 2014; Mikach & Bailey, 1999; Simpson, Gangestad, & Biek, 1993). Townsend (1995) argued not only was sociosexuality related to low investment strategies but that this effect interacted with biological sex. That is, whereas unrestricted men prefer lower investment relationships, both restricted and unrestricted women who are pursuing a mate consider their partner's ability to invest in a relationship.

It is important to distinguish the effects of sociosexuality in the context of initial relationship pursuit versus in the context of a committed relationship. The expenditure of mating effort in the context of a committed relationship may be detrimental to the parental effort (or investment effort) typical of long-term mateships, especially if the mating effort is directed elsewhere than the current partner. Unrestricted individuals view cheating as more acceptable than restricted individuals (Feldman & Cauffman, 1999). Penke and Asendorpf (2008) also found that unrestricted individuals in a committed relationship were more likely than restricted individuals to be single or with a new partner at a later point in time. These findings suggest that sociosexuality's association with mating effort (whether short-term or low investment) undermines the commitment processes in established relationships and limits potential investments. This assertion is borne out in research that demonstrated restricted individuals are less attentive to attractive, opposite-sex others than unrestricted individuals (Miller, 1997). As well, more

recent research has demonstrated that sociosexual attitudes negatively predict both men's and women's own relationship satisfaction (Webster et al., 2015).

Sociosexuality predicts both temporally short relationships and low investment relationships, and each of these associations seems to be detrimental to unrestricted individuals' long-term relationships. This dissertation sets out to explicitly explore if sociosexuality is with primarily associated with either short-term or low investment relationships. Given the previous work, one of two patterns of results may occur:

Pattern 1: Sociosexuality will be positively associated with a preference for temporally short mating relationships.

Pattern 2: Sociosexuality will be positively associated with a preference for low-investment mating.

There are, however, data that contradict these patterns, implying there are other possible interpretations of sociosexual orientation. Bleske-Rechek and Buss (2001), for example, found, when examining choices in opposite-sex friends, that unrestricted women and men saw more potential for future sexual interactions with their opposite-sex friends than did restricted individuals. These data suggest that, though unrestricted individuals simultaneously show more interest in short-term sexual relationships than restricted individuals, they consider potential relationships both now and at temporally distant (i.e., future) points; this could indicate some level of long-term orientation. Additionally, Townsend (1995) argued that women consider investment in both short-term and long-term partners. That is, unrestricted individuals may consider some sort of future time point or potential investment in partners irrespective of current investment,

and this seems to contradict the narrative that unrestricted individuals prefer short-term or low-investment relationships over long-term or high-investment relationships.

These findings suggest a third possible pattern. Even in earlier discussions of sociosexuality, scholars have stated that an unrestricted sociosexuality does not preclude the pursuit of long-term relationships (Jones, 1998; Simpson & Gangestad, 1991). Though some have found a negative association of sociosexuality with long-term mating orientation (Jackson & Kirkpatrick, 2007), data remain scarce and unclear. In fact, some researchers have found that those with unrestricted sociosexuality report having had more long-term relationships than their restricted counterparts (Penke & Asendorpf, 2008). This finding seems key to understanding sociosexuality, but it is regularly ignored while sociosexuality remains synonymous with short-term/low-investment relationships. This third pattern may indicate that sociosexuality measures a degree of openness to sexual relationships in general, rather than affinity toward the particular kinds of relationship depicted in Patterns 1 and 2. Moreover, if unrestricted individuals are more likely than restricted individuals to have relationships characterized by high-investment or a long-term orientation, as well as more likely than restricted individuals to have more relationships characterized by low investment or a short-term orientation, it may suggest that unrestricted individuals exhibit a form of mating flexibility. That is, unrestricted individuals may be more willing than restricted individuals to accept and pursue the most available relationship, even if the qualities of the relationship do not match the desires of the unrestricted individual. Flexibility in mating strategy may have been advantageous for those in ancestral environments (especially unpredictable environments), and individuals

with unrestricted sociosexual orientations may simply be more adept at pursuing available relationships than restricted individuals. It may be that unrestricted individuals are more likely than restricted individuals to pursue any relationship type with a given individual, leading to a third possible pattern of data:

Pattern 3: Sociosexuality will be positively associated with the endorsement of all relationship types, irrespective of the amount of time and amount of investment (i.e., short-term and long-term relationships as well as low and high investment relationships), and, therefore, unrestricted individuals will demonstrate a stronger preference for any relationship than restricted individuals.

The Current Research

This research will address several questions regarding the role of sociosexuality in relationship pursuit and evaluation. More specifically, it will examine sociosexuality as a proclivity towards short-term mating by decomposing relationships into separate, but related, constructs of time and investment. The main analyses examine how participants' sociosexual orientation influences their perception of time and investment with a current or past partner (Study 1), how sociosexuality influences participants' perception and endorsement of relationships varying in their length (i.e, time) and investment (Studies 2 and 3), and finally how sociosexuality influences participants' actual relationship pursuit (Study 4). Specifically, this work examines if unrestricted sociosexuality promotes the pursuit of short-term relationships (Pattern 1), low-investment relationships (Pattern 2), or a pursuit of relationships more generally (Pattern 3).

Additionally, this work will use the long-standing practice of teasing apart highly related constructs (e.g., commitment and psychological attachment) and experimentally manipulating two separable yet highly correlated constructs (e.g., harm and sanctity moral concerns; Frimer, Tell, & Haidt, 2015) to examine whether time and investment contribute separately to our understanding of potential and current relationships. Though these constructs are no doubt statistically related, that does not preclude them from contributing separately to an individual's perception and evaluation of relationships.

Study 1 examines the association of investment, time-orientation, and sociosexuality by asking participants to consider the future of a relationship (i.e., time)

and the resources that they want to commit to a relationship (i.e., investment). As similar constructs (e.g., investment and commitment) have shown a correlation in previous research (r's = .36-.73; Lund, 1985; Rusbult, 1980), it is conceivable that time and investment may correlate with one another for those currently in a relationship (i.e., highly committed partners expect to invest resources into the future with a partner). However, for those not in a relationship, it is unknown if the future of a relationship with a potential partner would be considered separately from the amount of investment in a potential partner. Specifically, examining potential relationships (i.e., not current relationships) may allow for consideration of time and investment separately, as single individuals may be better able to distinguish their future from their resources.

Study 2 builds upon the distinction between time and investment in potential relationships by experimentally manipulating the two dimensions. Study 2 then uses this manipulation to examine how sociosexuality predicts the endorsement, incidence, and frequency of relationships that vary in length (i.e., short-term vs. long-term) and the amount of investment (i.e., low vs. high). This manipulation more directly tests if sociosexuality predicts preference for one of the three patterns, and for an examination of how the time and investment manipulations affect participants' evaluations of different relationships.

Study 3 replicates Study 2's examination of the association of sociosexuality with the endorsement, incidence, and frequency of the four relationship types developed in Study 2. As well, Study 3 demonstrates how sociosexuality influences the time and investment in potential relationships by having participants nominate potential sexual

partners. That is, participants indicate the length and investments of an imagined relationship with the nominated partner (based on the manipulation developed in Study 2); sociosexual orientation is then used to predict a preference for the relationships defined by differing amounts of time and investment.

Finally, Study 4 builds upon the findings of Studies 1, 2, and 3 by using a behavioral measure of relationship pursuit. Participants interacted with two confederates and then indicated their interest in pursuing relationships defined by an experimentally manipulated amount of time and investment. That is, Study 4 examined if participants actually take steps to pursue a short-term relationship (Pattern 1), a low investment relationship (Pattern 2), or any relationship (Pattern 3). Moreover, Study 4 also measures if sociosexuality predicted flexibility in relationship pursuit. Participants are given the opportunity to pursue a relationship that they had ranked as less appealing than other relationships. Sociosexuality is then used to predict if unrestricted individuals would be more likely than restricted individuals to pursue a relationship defined by a length of time and an amount of investment supportive of one of the three patterns.

Study 1

METHOD

Participants

Participants were 300 individuals (217 female, 81 male, 2 non-identified) drawn from The University of Texas at Austin and Amazon Mechanical Turk who participated for either course credit or $.50. In terms of race, 10.7% of participants reported that they were African American, 14.3% Asian American/Pacific Island, 58.3% European American/Caucasian, 12.7% Hispanic American/Latino(a), and 4.0% bi/multi-racial. University students were, on average, 20.1 years old (SD = 1.19) and Amazon Mechanical Turk workers were, on average, 35.6 years old (SD = 13.51). Also of note, 219 individuals completed the study thinking about their current romantic partner and 81 participants completed this study thinking about their most recent romantic partner.

Measures

Participants rated their agreement with a 13 items assessing their Time Orientation (i.e., their orientation toward the future) with either their current or most recent sexual partner on a 1 (Strongly Disagree) to 7 (Strongly Agree) Likert scale (Cronbach's $\alpha = .98$; e.g., "I want to have many more sexual experiences in the future with [Partner's Name];" see Table 1). Participants also rated their agreement with 13 items that assessed their Investment Orientation (i.e., the desire to invest) with their current or most recent sexual partner on the same scale ($\alpha = .95$; e.g., "I want to invest

romantically (e.g., my emotions and resources) in my sexual relationship with [Partner's Name];" see Table 1).

Participants then provided their sociosexuality with the Sociosexual Orientation Inventory-Revised (SOI-R; Cronbach's α = .86; Penke & Asendorpf, 2008). Participants also rated their agreement from 1 (Strongly Disagree) to 7 (Strong Agree) on seven previously validated relationship evaluation scales. Participants completed four items assessing their Psychological Attachment (e.g., "I feel very attached to our relationship - very strongly linked to my partner;" α = .83), four items assessing Long-Term Orientation (e.g.," My partner and I joke about what things will be like when we are old;" α = .79), and four items assessing Intent to Persist (e.g.," I intend to stay in this relationship;" α =. 97) with their current or most recent sexual partner (Arriaga & Agnew, 2001). As well, participants provided ratings on five items assessing their Satisfaction with (e.g., "My relationship is better than others' relationship;" α = .96), five items assessing their Quality of Alternatives to (e.g., "The people other than my partner with whom I might become involved are very appealing;" α = .88), five items assessing the Investment Size (Rusbult) with (e.g., "I have put a great deal into our relationship that I would lose if the relationship were to end;" α = .93), and seven items assessing Commitment to (e.g., "I want our relationship to last for a very long time;" α = .95; Rusbult, Martz, & Agnew, 1998) their current or most recent sexual partner. Answers for each scale were averaged and standardized. Participants also completed demographic items (e.g., age, race, sex, relationship status).

Procedure

Participants completed this study online. After logging into the experiment system, participants provided informed consent and were directed to a page that defined a "sexual relationship" as "any sort of relationship that includes an experience which involved physical intimacy of any sort between you and another person. This physical intimacy can include hand-holding, kissing, or any form of sex. PLEASE UNDERSTAND - a sexual relationship does not mean you have had sexual intercourse with your partner, only that you have shared some level of physical intimacy. It ALSO does not mean you have a committed/long-term relationship with the person. A sexual relationship could be a relationship with a person whom you made out with at a party or someone whom you plan to marry." Participants then indicated if they understood the definition of "sexual relationship" and asked them to provide the first name and last initial of the person with whom they were currently or most recently in a sexual relationship. Participants also indicated if this was a current or most recent partner. Participants who indicated it was "most recent" partner provided data on how long ago the sexual relationship ended (M = 13.24 months; SD = 30.5) and how long the sexual relationship lasted (M = 17.94 months; SD = 41.6).

Participants then provided their ratings of their Time and Investment Orientation toward the nominated individual. Before each scale, participants were provided with the definition of "sexual relationship" (i.e., "Any relationship that involved physical intimacy (this doesn't have to mean sexual intercourse)") and "resources" (i.e., "Your money, assets (e.g., a car), or your energy"). These scales were counterbalanced. After

completing both scales, participants provided their sociosexual orientation, and completed the scales assessing Psychological Attachment, Long-Term Orientation, Intent to Persist, Satisfaction, Quality of Alternatives, Size of Investment, and Commitment. Participants then provided demographic information, were thanked, and debriefed.

RESULTS

Main Analyses

Descriptive statistics, by participant sex, are presented in Table 2. Correlations are presented in Table 3 divided by whether participants were reporting on a current partner (below the diagonal; n = 219) or their most recent partner (above the diagonal; n = 81). Of note, the correlation of Time and Investment Orientations drops precipitously for those reporting on a most recent partner, $r = .29$, $p < .001$, as compared to those reporting on a current partner, $r = .82$, $p < .001$. Additionally, the correlation of Time and Investment Orientations were lower for women reporting on a partner $r = .76$, $p < .001$, than men reporting on a partner, $r = .91$, $p < .001$. I used Preacher's (2003) web utility to test for a significant difference in independent correlation coefficients; results revealed a significant difference between the association of the Time and Investment Orientation scales for men and women reporting on a partner, $z = 3.12$, $p = .002$. For those reporting on their most recent partner, the correlation of Time and Investment Orientation for men was lower, $r = .10$, $p = .679$, than women, $r = .43$, $p = .001$. However, these correlation coefficients were not significantly different from one another, $z = -1.34$, $p = .186$. The correlation of both the Time Orientation and Investment Orientation scales with the

existing measures of relationship evaluation (e.g., psychological attachment, long-term orientation, etc.) are similar (i.e., r's = |.30-.60|) for both those reporting on their current or most recent partners. One exception to this general range of associations, though, is commitment; the correlations of the Time Orientation scale and Investment Orientation scale with commitment is higher for those reporting on current partners, $r = .82$, $p < .001$, and $r = .73$, $p < .001$, than for those reporting on their most recent partners, $r = .62$, $p < .001$, and $r = .61$, $p < .001$.

When considering participants reporting on a current partner, SO significantly negatively correlated with the Investment Orientation, $r = -.19$, $p = .004$, indicating that unrestricted individuals are less likely to want to invest their resources in their current romantic partners (in support of Pattern 2). This is in line with previous research; however, the magnitude of this correlation is smaller than previous reports of Sociosexuality and Investment (Ellis, 1998; Simpson & Gangestad, 1991). Though not statistically significant, sociosexuality was modestly negatively correlated with time orientation (in support of Pattern 1). Additionally, SO negatively correlated with partnered participants' feelings of psychological attachment, $r = -.17$, $p = .013$, satisfaction, $r = -.16$, $p = .018$, and feelings of commitment, $r = -.18$, $p = .008$. SO positively correlated with quality of alternatives, $r = .30$, $p < .001$. Additionally, sociosexuality and Long-Term Orientation were modestly negatively correlated (albeit non-significantly), similar to correlations found by Jackson & Kirkpatrick (2007).

However, when considering participants thinking about their most recent partner, SO significantly positively correlated with the Time Orientation scale, $r = .34$, $p = .002$,

indicating that unrestricted individuals felt oriented toward the future with their most recent partner (in opposition to Pattern 1). Additionally, SO significantly negatively correlated with the Investment orientation scale, $r = .29$, $p = .008$ (supporting Pattern 2); as compared to restricted indivdiauls, unrestricted individuals felt inclined to invest less of their resources in a relationship with their most recent partner. Also, SO was marginally positively correlated with satisfaction, $r = .19$, $p < .098$. Correlations between SO and the relationship evaluation variables were lower than those reporting on current partners (all r's < |.11|).

Subsidiary Analyses

I also ran mediational analyses to determine if relationship evaluation variables mediated the relationship between sociosexuality and commitment. Using the PROCESS macro developed by Hayes (2013), I used bootstrapping procedure (Preacher & Hayes, 2004), and generated a 95% confidence interval with 1000 resamples. Significant mediation is indicated when the upper and lower limits of the confidence interval do not include zero. Sociosexuality was entered as the independent variable, and Commitment was entered as the dependent variable. In separate analyses, Psychological Attachment, Long-Term Orientation, Intent to Persist, Satisfaction, Quality of Alternatives, and Size of Investment were entered as mediators.

Results of these analyses are shown in Table 4. Only Psychological Attachment (b = -.07, SE = .03, 95% CI [-.13,-.02]), Satisfaction (b = -.05, SE = .02, 95% CI [-.10,-.02]), and Quality of Alternatives (b = -.06, SE = .02, 95% CI [-.10,-.03])

significantly mediated the effect of Sociosexuality on Commitment. That is, unrestricted sociosexuality decreases levels of Psychological Attachment which in turns decreases commitment to a partner. As well, unrestricted sociosexuality actually increases perception of the Quality of Alternatives which in turn decreases commitment to a partner. Finally, unrestricted sociosexuality decreases Satisfaction with one's partner which, in turn, decreases commitment to a partner.

DISCUSSION

Study 1 provides intriguing and, at times, conflicting results. Time and investment are highly positively correlated for those currently in relationships. This is unsurprising as longer-term relationships usually involve larger amounts of investment in the natural world (e.g., married couples have invested more in each other and wish to invest more with each other than a couple who just began dating). However, this incredibly high correlation of the Time and Investment scales drops steeply for those reporting on a recent partner compared to that same correlation for those reporting on a current partner. It may be that time and investment are easier to differentiate for those considering a relationship that does not currently exist (i.e., the relationship is not currently formed), but when considering a current partner, the two seem one in the same. The divergent nature of these coefficients justifies the continued manipulation of time and investment, especially in contexts that do not involve romantic relationships.

Additionally, for those thinking about a previous partner, unrestricted individuals consider time and investment as less associated with each other than restricted

individuals. For those in relationships, sociosexual orientation is negatively correlated with both the Time and Investment scales, indicating that unrestricted sociosexuality may indicate a preference for short-term relationships and low-investment relationships. These results are consistent with both Patterns 1 and 2. However, for those reporting on their most recent partner, sociosexual orientation had a negative association with the Investment scale, but a positive association with the Time scale. That is, unrestricted individuals did not feel a desire to invest in their most recent partner, but felt oriented toward the future with that person. It may be that these unrestricted individuals believe there is an opportunity for further sexual opportunities with their former partners. These results are consistent with Pattern 2 but contradict Pattern 1. Given the divergent nature of the evidence, further exploration of sociosexuality's association with Time and Investment is necessary.

In summary, Study 1 found interesting patterns of correlations for Time, Investment, and Sociosexuality. For those currently in a relationship, Time and Investment are nearly identical constructs, and unrestricted individuals feel less desire to invest in their partners. For those not currently in relationships, Time and Investment have a weaker (though still significant), positive correlation, and whereas unrestricted individuals feel less desire to invest in their most recent partner, they are oriented to the future with their most recent partner. Moreover, research on mating strategies may benefit by distinguishing between time and investment in the same was that the field of close relationships benefited by distinguishing between satisfaction and dependence. Therefore, Study 2 examines how sociosexuality affects relationship preferences and

evaluations while characterizing relationships in regards to time and investment separately. That is, in Study 2, participants viewed four relationship descriptions; these relationship descriptions were manipulated to evince both (1) either a small or large amount of investment and (2) either a short or long-term orientation.

Study 2

METHOD

Participants

Participants were 214 (123 female, 81 male, 10 did not disclose) Texas A&M University students who completed the study for course credit (M age = 19.04 years, SD = .95 years). In terms of race/ethnicity, 5.2% of participants reported they were African American, 5.2% Asian American/Pacific Islander, 68.9% Caucasian, 18.4% Hispanic, 0.9% Native American, and 1.4% biracial.

Procedure

I created relationship descriptions by manipulating both the amount investment (high vs. low) in the partner and the amount of time the relationship was to last (short-term vs. long-term). These two manipulations produced four different combinations of investment and relationship length (i.e., time): a Low Investment, Short-Term relationship description (i.e., Low-Short; "I would not like to invest myself romantically in this relationship, and I do not expect that we will have many romantic/sexual experiences in the future"), a Low Investment, Long-Term relationship description (i.e., Low-Long; "I would not like to invest myself romantically in this relationship; however, I expect that we will have many romantic/sexual experiences in the future"), a High Investment, Short-Term relationship description (i.e., High-Short; "I would like to invest myself romantically in this relationship; however, I do not expect that we will have many

romantic/sexual experiences in the future"), and a High Investment, Long-Term relationship description (i.e., High-Long; "I would like to invest myself romantically in this relationship, and I expect that we will have many romantic/sexual experiences in the future").

Participants saw this text: "This description was used by someone to describe a recent romantic/sexual experience:" followed by one of the four relationship descriptions. Participants were then asked to "Spend a few moments and try to recall the MOST RECENT OCCASSION where you would have used a description like this to describe a recent romantic/sexual experience." They then responded to a question that determined the incidence of these relationship descriptions: "How long ago did your most recent experience that fits this description take place?" Participants could respond to this question by indicating an amount of time (in months), or they could indicate that they had never had an experience that fit the description (i.e., the Incidence of these relationships). Those who indicated experience with a relationship that fit the description (i.e., they indicated some number of months since having a similar experience) were asked to answer the endorsement and relationship evaluation items thinking about how they felt right after the experience. They also indicated how many relationships they had experienced that fit each description (i.e., the Frequency of these relationships). Those who indicated that they had no experience with a relationship that fit the description were asked to answer the evaluation items imagining how they might have felt right after the experience. Participants then completed the endorsement and relationship evaluation variables. The endorsement and romantic evaluation variables were randomized in four

separate blocks of questions, one for each relationship description, and the order in which participants viewed the four descriptions was determined randomly. Once participants completed the four relationship description blocks, they completed the SOI and demographic measures before being thanked and debriefed.

Measures

Participants rated their agreement with four items that assessed their Endorsement of the four different relationship descriptions on a scale from 1 (Totally Disagree) to 7 (Totally Agree). These items ("I enjoy having romantic/sexual experiences that fit this description," "I am OK having romantic/sexual experiences that fit this description," "I hope to have more romantic/sexual experiences that fit this description," "I have had many romantic/sexual experiences that fit this description") showed acceptable reliability (Cronbach's α=.82).

Participants used the same 1-7 scale to evaluate the four relationships descriptions on items assessing romantic desire, attachment bond strength, commitment, and satisfaction. I used five items to assess Romantic Desire (e.g., "I feel a great deal of sexual desire for this person"; Eastwick & Finkel, 2008; α = .82), four items to assess Attachment Bond Strength (e.g.,"It is important to me to see or talk with this person regularly"; Tancredy & Fraley, 2006; α = .86), 12 items to assess Commitment (e.g., "When I make plans about future events in my life, I think about the impact of my decisions on my relationship with this person"; Arriaga & Agnew, 2001; α = .88) and five

items to assess Satisfaction (e.g., "I feel satisfied with my relationship with this person"; Rusbult, Martz, & Agnew, 1998; $\alpha = .84$).

Additionally, participants completed two items assessing sociosexual orientation (Simpson & Gangestad, 1991): "I can imagine myself being comfortable with and enjoying 'casual' sex with different partners," and "I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her" (reverse coded; $\alpha = .83$). Participants also completed demographic items (e.g., age, race, sex, relationship status).

RESULTS

Descriptive Analyses

Descriptive statistics, by participant sex, are presented in Table 5. I began my analyses by counting the number of individuals who reported having had a relationship similar to the descriptions provided. The High-Long and Low-Short descriptions were the most common of the relationships reported with eight-five percent and 70% of the sample indicating some experience with the descriptions, respectively. Fifty-four percent of the sample reported experience with the High-Short relationship description (i.e., short-term and high investment) and 46% indicated they had experienced a relationship matching the Low-Long description (i.e., long-term, low investment). Chi square tests revealed that the participants reported significantly more experience with the High-Long description (N = 181 out of 212) than the Low-Short description (N = 150), $\chi 2 = 13.24$, $p < .001$. Participants also reported significantly more experience with the Low-Short

description than the High-Short description (N = 116), $\chi 2 = 11.66$, $p < .001$. Finally, participants reported marginally more experience with the High-Short description than with the Low-Long description (N = 98), $\chi 2 = 3.06$, $p = .080$.

I also ran a repeated measures ANOVA with two factors (i.e., high vs. low investment and long vs. short time perspective) on the Frequency of these relationships. This allowed me to effectively create a 2 × 2 model of time and investment. Results indicated there was no effect of the time manipulation, $F(1,213) = 0.25$, $p = .621$, or the investment manipulation, $F(1,213) = 0.15$,$p = .699$; however, there was a significant interaction of the manipulations, $F(1,213) = 10.67$, $p < .001$. Post-hoc analyses indicated that the number of Low-Short relationships, M = 1.52, SD = .15, was not significantly different from the number High-Long relationships experienced, M = 1.40, SD = .15; p = .576, but was significantly higher than the number of High-Short, M = 1.05, SD = .15; p = .032, and number of Low-Long, M = 1.05, SD=.15; p = .030, relationships experienced. The number of High-Long, High-Short, and Low-Long relationships did not differ significantly from one another (ps > .106).

Main Analyses

I examined the associations of participants' sociosexuality score with their Endorsement as well as the Incidence and Frequency of each of the relationship descriptions. A similar, though not identical, pattern emerged for each set of correlations (Table 6). Compared to individuals with restricted sociosexuality, those with more unrestricted sociosexuality scores were more likely to endorse the Low-Long description,

Pearson's r =.43, $p < .001$,, the Low-Short description, r = .36, $p < .001$, and, to a lesser extent, the High-Short description, r =.17, $p < .001$. However, there was no relation between the participants' sociosexuality score and endorsement of the High-Long description, r =.10, p = .167. Even with the modest correlation of High-Long relationships, these significant correlations support Pattern 3 (i.e., interest in any relationship). I examined if these correlations differed between male and female participants using Preacher's (2002) web application based off of Cohen and Cohen (1983); no significant differences were found (all ps > .140). I also examined if these correlations differed significantly from one another using the method provided by Lee and Preacher's (2013) web application based off of Steiger (1980). Results indicated that the association of sociosexuality with endorsement of the Low-Long descriptions did not differ from the association of sociosexuality with endorsement of the Low-Short description, z = .59, p = .555, but did differ significantly from the association of sociosexuality with the endorsement of the High-Short, z = 3.26, $p < .001$, and the High-Long, z = 4.02, $p < .001$, descriptions. The association of sociosexuality with the endorsement of the Low-Short description differed significantly from the association of sociosexuality with endorsement of the High-Short, z = -2.93, p = .003, and the High-Long, z = 3.06, p = .002, descriptions. Finally, the association of sociosexuality with the High-Short description did not differ significantly from the association of sociosexuality with endorsement of the High-Long description, z = .73, p = .467.

There was also a significant correlation between participants' sociosexuality and the incidence (i.e., whether or not a participant had experience) of each relationship

description; participants with more unrestricted sociosexuality were more likely than restricted participants to report the incidence of a Low-Long, $r = .37$, $p < .001$, a High-Long, $r = .16$, $p = .019$, a Low-Short, $r = .16$, $p = .022$, and a High-Short, $r = .16$, $p = .023$, relationship at some point in the past (supporting Pattern 3; see Table 6). I again examined if these correlations differed between male and female participants, and, again, no significant differences were found (all ps > .267). Using the same method, I compared the difference between these correlations. The association of sociosexuality with the incidence of the Low-Long relationship description was significantly greater than the associations of sociosexuality with the incidence of High-Long, $z = 2.43$,$p = .014$, Low-Short, $z = 2.51$, $p = .012$, and High-Short, $z = 2.56$, $p = .011$, relationships. The association of sociosexuality with incidence of High-Long relationships was not significantly different from association of sociosexuality with the incidence of Low-Short, $z = .05$, $p = .964$, or High-Short, $z = .05$, $p = .958$, relationships. As well, there was no significant difference in the association of sociosexuality and the incidence of Low-Short relationships and the association of sociosexuality and the incidence of High-Short relationships, $z = .01$, $p = .991$.

Finally, participants' sociosexuality scores significantly correlated with the Frequency of relationships reported for the Low-Long description, $r = .56$, $p < .001$, Low-Short description, $r = .34$, $p < .001$, the High-Long description, $r = .22$, $p = .003$, and marginally for the High-Short description, $r = .18$, $p = .067$; these findings also support Pattern 3 (i.e., interest in any relationship; see Table 6). No sex differences emerged between these associations (all ps > .147). Again, I compared the difference between

these associations and found that the association between sociosexuality and the frequency of Low-Long relationships was significantly greater than the association of sociosexuality with the frequency of Low-Short, $z = 2.40$, $p = .016$, High-Long, $z = 3.05$, $p = .002$, and, High-Short, $z = 3.34$, $p = .001$, relationships. The association of sociosexuality with frequency of Low-Short relationships did not differ from the association of sociosexuality with the number of High-Long, $z = 1.23$, $p = .219$,, or High-Short relationships, $z = 1.46$, $p = .144$. As well, the association of sociosexuality with the number of High-Long relationships did not differ significantly from the association of sociosexuality with High-Short relationships, $z = .395$, $p = .693$.

Subsidiary Analyses

I also wanted to examine the effect size for the time and investment manipulations on the endorsement and romantic evaluation variables. To do so, I ran a repeated measures ANOVA with two factors: Investment (i.e,. high vs. low) and Time Orientation (i.e., long- vs. short-term), again creating a 2×2 model of time and investment. For the Endorsement measure, there was a significant main effect of the time manipulation, $F(1,198) = 138.17$, $p < .001$, and a significant main effect of the investment manipulation, $F(1,198) = 201.80$, $p < .001$, as well as a significant interaction, $F(1,198) = 13.03$, $p < .001$. Examination of the means revealed participants endorsed the High-Long relationship the most, followed by the High-Short relationship, then Low-Long relationship, and endorsed the Low-Short relationship the least (see Table 7). For the Desire measure, there was a significant main effect of the time manipulation, $F(1,211) =$

157.63, $p < .001$, and a significant main effect of the investment manipulation, $F(1,211) = 448.12$, $p < .001$, as well as a significant interaction $F(1,211) = 111.75$, $p = .004$; again, the pattern of means indicated participants felt greatest desire for partners in the High-Long relationship, followed by the High-Short relationship, then Low-Long relationship, and the least desire was reported for the Low-Short relationship (see Table 7). For the Attachment Bond Strength measure, there was a significant main effect of the time manipulation, $F(1,211) = 103.59$, $p<.001$, and a significant main effect of the investment manipulation, $F(1,211) = 391.09$, $p < .001$, as well as a significant interaction, $F(1,211) = 16.97$, $p < .001$. The pattern of means was similar to the means of the Endorsement and Desire variables (See Table 7). For the Commitment measure, there was a significant main effect of the time manipulation, $F(1, 211) = 106.52$, $p < .001$, and a significant main effect of the investment manipulation, $F(1,211) = 407.84$, $p < .001$, as well as a significant interaction, $F(1,211) = 22.44$, $p < .001$; again, patterns for means was similar to the previous evaluation variables (see Table 7). For the Satisfaction measure, there was a significant main effect of the time manipulation, $F(1, 211) = 128.25$, $p < .001$, and a significant main effect of the investment manipulation, $F(1,211) = 347.54$, $p < .001$, as well as a significant interaction $F(1,211) = 30.37$, $p < .001$; again, the pattern of means remained consistent with previous findings (see Table 7). Effect sizes indicated that both the time and investment manipulations independently contributed to the effect for the endorsement measure as well as each romantic evaluation variable (see Table 7); for each variable, the effect size for the investment manipulation was larger than the effect size for the time-orientation manipulation.

Finally, to examine if the effect of relationship description on endorsement or romantic evaluation interacted with participant's actual experience with the relationship or gender, I ran a mixed model ANOVA with four rows per participant (one for each description) using SAS Proc MIXED. The intercept was allowed to vary randomly and type was a categorical IV. The procedure generated means that are predicted values for each variable. I standardized the endorsement and evaluation variables, averaged across them and performed the analyses on the Grand Endorsement/Evaluation variable. There was no significant three-way interaction between Relationship Description, Experience, and participant Sex, $F(3,598) = 0.19$, $p = .905$. I also found no interactions between the Relationship Description, participant experiences, or gender: Relationship Description × Experience, $F(3,629) = .46$, $p = .708$, Relationship Description × Sex interaction, $F(3,606) = .64$, $p = .587$, and Experience × Sex, $F(1,610) = 0.00$, $p = .992$.

DISCUSSION

Study 2 examined the association of sociosexuality with the endorsement, incidence, and frequency of the different relationship descriptions. Sociosexuality had a significant positive association with the endorsement, incidence, and frequency, of each relationship description (except for the endorsement of High-Long relationships). Moreover, all associations of sociosexuality with endorsement, incidence, and frequency (both significant and non-significant) were positive. These results seem to support Pattern 3; that is, unrestricted sociosexuality predicts a pursuit of any relationship. This could indicate that sociosexuality represents openness to any mating opportunity, or, at least,

some level of malleability in relationship pursuit. Though the High-Long and Low-Short relationships were experienced the most, nearly half the participants had experience with the Low-Long and High-Short relationships. Additionally, both time and investment independently and positively predicted romantic evaluations. I also found that the effect sizes of the investment dimension were regularly larger than effect sizes of the time-orientation dimension.

Study 2 may be limited, though, by its use of recollections. The participants' recollections of these previous relationships may be unreliable (e.g., some indicated that the relationships dissolved occurred over a year ago). Therefore, Study 3 attempted to replicate the same pattern of findings while asking participants to consider potential, instead of previous partners.

Study 3

METHOD

Participants

Participants were 225 (127 women, 98 men) amazon.com Mechanical Turk workers who completed the study for $ .50 (M age = 35.73 years, SD = 12.75 years). In terms of race/ethnicity, 7% of participants reported they were African American, 5% Asian American/Pacific Islander, 76% Caucasian, 6% Hispanic, 1% Native American, 3% bi/multiracial, and 1% did not report their race/ethnicity.

Procedure and Materials

Participants were asked to nominate five individuals whom they knew personally who were (a) not related to them, (b) were approximately the same age, and (c) were of the sex they romantically preferred. Participants then answered questions about each nominated target individually. First, participants indicated if they could ever consider each nominated target as a romantic/sexual partner. The participants were then asked to imagine that they had a romantic/sexual experience with each of the nominated targets and to assign the imagined relationship to a one of the four descriptions used in Study 2 (e.g., High-Long description was "I would like to invest myself romantically with this person, and I expect that we will have many more romantic/sexual experiences in the future").

Participants also indicated their agreement from 1 (Strongly Disagree) to 7 (Strongly Agree) on a number of romantic evaluation variables from Study 2. Participants responded to two items regarding their Romantic Desire (Cronbach's α = .93; "I feel a great deal of sexual desire for this person" and "I am romantically interested in this person"; Eastwick & Finkel, 2008), Attachment Bond Strength (α = .60; "It is important to me to see or talk with [this person] regularly" and "[This person] is the first person I would turn to if I had a problem"; Tancredy & Fraley, 2006 , Commitment (α = .89; "I feel very attached to my relationship with [this person] – very strongly linked to [this person]" and "I am very affected when things are not going well in my relationship with [this person]"; Arriaga & Agnew, 2001), and Satisfaction (α = .89; "I feel satisfied with my relationship with [this person]" and "My relationship with [this person] is close to ideal"; Rusbult, Martz, & Agnew, 1998) regarding each imagined relationship with a nominated target. Participants then indicated their Endorsement of each relationship description independently of their evaluations of the nominated individuals using the same items as in Study 2. Finally, participants indicated if they had experience with each relationship description (i.e., Incidence) and how many experiences they have had with each (i.e., Frequency), completed the SOI-R (Penke & Asendorpf, 2008), were thanked, and debriefed.

RESULTS

Descriptive Analyses

Descriptive statistics, by participant sex, are presented in Table 8. I, again, began my analyses by counting the number of individuals who reported having had a relationship similar to the descriptions. The High-Long and Low-Short descriptions were the most common of the relationships reported with eighty-seven percent and 68% of the sample indicating some experience with the descriptions, respectively. Fifty-three percent of the sample reported experience with the High-Short relationship description and 45% indicated they had experienced a relationship matching the Low-Long description. Chi square tests revealed that the participants reported significantly more experience with the High-Long description (N = 196 out of 225) than the Low-Short description (N = 156), $\chi 2 = 20.87$, $p < .001$. Participants also reported significantly more experience with the Low-Short description than the High-Short description (N = 119), $\chi 2 = 12.80$, $p < .001$. Finally, participants did not report significantly more experience with the High-Short description than with the Low-Long description (N = 103), $\chi 2 = 2.28$, $p = .131$.

I also ran a repeated measures analysis of variance (ANOVA) to examine differences in the frequency of experiences with each relationship description reported. Results indicated a no significant effect of the time manipulation, $F(1,224) = 0.03$, $p = .866$; however there was a significant main effect of the investment manipulation, $F(1,224) = 5.39$, $p = .021$, as well as a significant interaction, $F(1,224) = 15.54$, $p < .001$. Post-hoc analyses indicated that the number of Low-Short relationships, M = 6.05, SD =

.86, was marginally different from the number of High-Long, M = 3.80, SD = .86; p = .065, and Low-Long relationships experienced, M = 3.96, SD = .86; p = .087, and it was significantly different than the number of High-Short relationships, M = 1.97, SD = .86; p = .030, experienced. As in Study 2, the number of High-Long, High-Short, and Low-Long relationships did not differ significantly from one another (all ps > .102).

Main Analyses

I examined the association of sociosexuality with the Endorsement, Incidence, and Frequency of each relationship description (see Table 6). For endorsement, as in Study 2, participants with unrestricted sociosexuality scores endorsed the Low-Long, r = .57, p < .001, the High-Short, r = .25, p < .001, the High-Long, r = .19, p = .004, and the Low-Short, r = .15, p = .030, relationship description more than those with restricted sociosexuality scores, showing support for Pattern 3. Again, using Preacher's (2002) web application I examined for sex differences in association of sociosexuality with the endorsement of these relationships; no sex differences were found (all ps > .283). Also as in Study 2, I tested the difference in the association of sociosexuality and the endorsement of the relationship descriptions using Lee and Preacher's (2013) web application. The association of sociosexuality with endorsement of the Low-Long description was significantly stronger than the association of sociosexuality with the endorsement of the High-Short description, z = 4.99, p < .001, the High-Long description, z = 5.15, p < .001, and the Low-Short description, z = 6.29, p < .001. Also, the association of sociosexuality with endorsement of the High-Short description was not

significantly different than the association of sociosexuality with the endorsement of the High-Long description, $z = .77$, $p = .444$, or the Low-Short description, $z = 1.46$, $p=.143$. Finally, the association of sociosexuality with the endorsement of the High-Long description did not significantly differ from the association of sociosexuality with endorsement of the Low-Short description, $z = .49$, $p=.626$.

I also examined the association of sociosexuality with the incidence of the four relationship descriptions. Compared to restricted participants, unrestricted participants reported higher incidence of the Low-Long, $r = .48$, $p < .001$, Low-Short, $r = .25$, $p < .001$, and High-Short, $r = .17$, $p = .009$, relationship descriptions but not for the High-Long description, $r = .09$, $p = .162$ (see Table 6). Despite this non-significant correlation, the significance of the other three relationship descriptions lends support to Pattern 3 (i.e., the pursuit of any relationship). Again, no sex difference in the association of sociosexuality and incidence of these relationships emerged (all $ps > .116$). The association of sociosexuality with incidence of the Low-Long description was significantly stronger than the association of sociosexuality with the incidence of Low-Short relationships, $z = 3.13$, $p = .002$, High-Short relationships, $z = 4.11$, $p < .001$, and High-Long relationships, $z = 4.71$, $p < .001$. As well, there was no significant difference in the association of sociosexuality with the incidence of Low-Short relationships and the association of sociosexuality with the incidence of High-Short relationships, $z = .90$, $p = .368$ but the difference between the association of sociosexuality with the incidence of Low-Short relationships was marginally significantly different from the association of sociosexuality with the incidence of High-Long relationships, $z = 1.76$, $p=.076$. There

was no significant difference in the association of sociosexuality with the incidence of High-Shorts and the association of sociosexuality with the incidence of High-Long relationships, $z = .937$, $p = .349$.

I also examined the association of sociosexuality with the frequency of the relationship descriptions reported by participants. Compared to restricted participants, unrestricted participants reported a higher frequency of Low-Short, $r = .36$, $p < .001$, High-Long, $r = .35$, $p < .001$, Low-Long, $r = .30$, $p < .001$, and High-Short relationships, $r = .23$, $p < .001$ (see Table 6); again these results support Pattern 3 (i.e., pursuit of any relationship). Again, no sex differences in the association of sociosexuality and frequency emerged (all ps > .138). The association of sociosexuality and Low-Short relationship frequency was not significantly different from the association of sociosexuality with High-Long relationship frequency, $z = .173$, $p = .863$, or the association of sociosexuality with Low-Long relationship frequency, $z = 1.06$, $p = .129$, but was significantly stronger than High-Short relationship frequency, $z = 1.96$, $p = .050$. The association of sociosexuality with High-Long relationship frequency was not significantly different form the association of sociosexuality with Low-Long relationship frequency, $z = .707$, $p = .480$, or with High-Short relationship frequency, $z = 1.49$, $p = .137$. There was no significant difference in the association of sociosexuality with Low-Long relationship frequency and High-Short relationship frequency $z = .744$, $p = .457$.

I also used linear regression to examine if sociosexuality predicted the number of targets assigned to each description. A score for each description was created for each participant by summing the number of targets assigned to each relationship description.

Four separate regressions analyses were run, regressing the number of target nominations in each description reported on participants' sociosexuality score (see Table 9). In contrast to Study 2, though, sociosexuality negatively predicted the number of nominated targets assigned to the Low-Short description, $\beta = -.47$, $t(223) = -7.88$, $p < .001$. However, sociosexuality significantly and positively predicted both the number of Low-Long relationships nominated, $\beta = .36$, $t(223) = 5.73$, $p < .001$, and the number of High-Short relationships, $\beta = .27$, $t(223) = 4.16$, $p < .001$. Results also indicated that sociosexuality marginally predicted the number of High-Long relationships, $\beta = .11$, $t(223) = 1.68$, $p = .094$. These results support Pattern 3, as sociosexuality is associated with relationships defined by high investment and long-term orientations. I also tested if participant sex moderated sociosexuality's effect on the number of targets assigned to each description using the PROCESS macro by Hayes (2013); no interactive effects were found (all ps > .183)[1].

However, these regressions do not allow for a comparison of the likelihood of assigning a target to one description over another. To examine this possibility, I used Mplus (Muthén & Muthén, 2008) to run multinomial logistic regressions for each of the participant's nominations. Multinomial logistic regression allowed me to examine if those with more unrestricted sociosexuality scores were more likely to assign a target to one relationship description over another. Mplus allowed the analyses to proceed without listwise deletion of participants with missing data. However, I was limited to the examination of one nominated target per analysis. I ran the regression three times for each target, rotating the reference group between the High-Short, Low-Long, and Low-

Short descriptions; results are displayed in full in Table 13. The most consistent pattern was that, for four out of five of the nominated targets, unrestricted participants, compared to restricted participants, were significantly more likely to assign a target to the Low-Long description than the Low-Short description.

Subsidiary Analyses

I also examined the differences in the endorsement and romantic evaluation variables depending on the relationship description. As in Study 2, I conducted a repeated-subjects analysis of variance (ANOVA) to examine the differences in Endorsement of the four different relationship descriptions. Results revealed a main effect of Time, $F(1,224) = 182.18, p < .001$, a main effect of investment, $F(1,224) = 119.95$, $p < .001$, as well as a significant interaction $F(1,224) = 207.70$, $p < .001$. Means were similar to means in Study 2 with participants giving the highest endorsement to the High-Long description; however, unlike Study 2 the Low-Long description received the next highest level of endorsement, then the High-Short description, and then the Low-Short description (see Table 10).

I also examined whether the relationship evaluation variables differed depending on the description the participant assigned to each nominated target. Recall that, in Study 3, I required participants to report on the evaluation variables (e.g., desire) for each nominated target, not just the romantic descriptions, which prevented the use of the repeated measures ANOVA used in Study 2. Therefore, I created a dataset with one target per row (i.e., five rows per participant), and ran a multilevel model that accounted

for the nesting of targets within person; the romantic evaluation score for each target served as the dependent variable. Time and investment and the interaction term of the two served as the independent variables. Analyses were conducted on all participants' nominated targets; the pattern of results remains the same, though, if analyses are conducted only on targets for whom participants could consider as a romantic/sexual partner.

Time and investment significantly interacted to predict each of the evaluation variables (all ps < .009). I then conducted simple effects test to examine the effect of time when investment was either high or low and the effect of Investment when time was considered in the short-term or in the long-term. Results of all models are displayed in Table 7. Generally, the effects of time are stronger when investment is high and the effects of investment are stronger in a long-term orientation. I also examined if participant sex interacted with time and investment to predict the romantic evaluation variables; no models revealed a significant interaction (all ps > .09).

DISCUSSION

Study 3 replicated the positive correlations of sociosexuality with the incidence, frequency, and endorsement of each relationship type; again, this finding supports the third possible pattern of results, lending credence to the idea that those with unrestricted sociosexual orientations are open to any relationship. The averages of the Study 2 and 3 correlation coefficients for endorsement, incidence, and frequency with sociosexuality were positive for the High-Long relationship (average r = .19), the High-Short

relationship (average r = .18), the Low-Long relationship (average r = .45), and the Low-Short relationship (average r = .27).

Additionally, Study 3 generally replicated the subsidiary results of Study 2; both time-orientation and investment contributed to participants' endorsement of the relationships. However, unlike Study 2, the effect size for the Investment dimension was not consistently higher than the effect size for the Time dimension. As well, for most of the romantic evaluation variables followed a similar pattern such that the High-Long relationships received the most positive ratings and the Low-Short relationships received the least positive ratings with the High-Short and Low-Long relationships receiving intermediate ratings.

Compared to previous research, these findings suggest that sociosexuality is associated with a broader range of desired romantic experiences. Previous conceptualizations have focused heavily on the short-term or low-investment desires (Patterns 1 and 2). Studies 2 and 3 indicated that unrestricted individuals are interested in a broader range of relationships than suggested by the previous literature (i.e., Pattern 3). Study 4 further clarifies how sociosexual orientation affects pursuit of a broad range of possible relationships (based on the relationship descriptions I have developed and used in Studies 2 and 3). Also, whereas Studies 2 and 3 relied on past recollection and future projections, Study 4 tests a participant's willingness to pursue each relationship type after live interactions with opposite-sex potential partners; Study 4 tests if unrestricted individuals are open to more relationship types than restricted individuals. Study 4 also examines if unrestricted sociosexuality indicates flexibility in mating strategies; that is,

Study 4 examines if unrestricted individuals are more likely to pursue a relationship description that they view as less appealing than restricted individuals.

Study 4

METHOD

Participants

Participants were 127 (95 female, 30 male, 2 chose not to disclose) University of Texas at Austin undergraduate students recruited from the Human Development and Family Sciences and Psychology subject pools who completed the experiment for course credit. The study also recruited from the university campus at large via fliers. In terms of race, 7.0% of participants reported they were African American, 33.6% Asian American/Pacific Islander, 24.2% European-American/Caucasian, 22.7% Hispanic-American/Latino(a), and 10.2% bi/multiracial (2.3% of participants chose not to answer the question). In terms of relationship status, 46.1% of participants reported being in a relationship, and 51.6% reported not being in a long-term, committed relationship (2.3% did not provide an answer).

Procedure

One participant completed the procedure at a time. Participants entered the questionnaire room and were greeted by a same-sex experimenter who informed them that, while they were expecting more participants to arrive, the participants could begin the experiment now. Participants provided informed consent and completed three questionnaires to assess Attachment Style, Sociosexual Orientation, and Big Five personality traits. While participants completed these questionnaires, the first of two

opposite-sex confederates entered the room, posing as a participant arriving late to the experiment. The first confederate appeared to grant informed consent and fill out the same questionnaires. When the participant indicated that he/she had finished the questionnaires, the first confederate waited fifteen to thirty seconds and then informed the experimenter that he/she has also finished. The experimenter then asked both the participant and first confederate to follow him/her to the interaction room for the next task.

The experimenter seated the participant and first confederate across from each other in the interaction room and explained that the experiment was testing different exercises that help individuals get to know each other. The experimenter explained one of two tasks to the participant and first confederate: Picture Descriptions or University Experiences. Each task took approximately five minutes, and the order of the tasks was counterbalanced. In the Picture Descriptions task, the participant and confederate alternated describing five pictures each from the Thematic Apperception Task (Eastwick, Richeson, Son, & Finkel, 2009; Murray, 1943) for 30 second intervals; in this task, the confederate maintained a flat affect and behaviorally neutral mannerisms (e.g., minimal eye contact, leaning back). In the University Experiences task, the participant and confederate alternated asking five questions each about their experiences at the university and in their classes; in this task, confederates demonstrated positive affect and engaged in minimally flirtatious behaviors (e.g., eye contact, leaning forward; Penke & Asendorpf, 2008). In both tasks, the confederate's behavior and responses to the stimuli were scripted and well-rehearsed before the experiment. At the end of the task, the

experimenter returned to the room and explained that the participant and confederate would now answer questions about the interaction they just had. Then, the experimenter led the participant back to the questionnaire room.

Once back in the questionnaire room, the participant completed the Interaction and Attraction questionnaire about the previous interaction and his/her interest in the first confederate, including a manipulation check and the dependent measures of Desire and Relationship Openness. After completing this questionnaire, participants were told, via the computer program, "We are introducing participants to each other if they would be interested in meeting up outside of the laboratory. However, we only want to match participants who are generally interested in similar kinds of relationships. If you were to start seeing the other participant and discovered that you both liked each other, what kind of relationship would you be interested in having with him/her?" Participants then had the opportunity to indicate interest in any, all, or none of the following four different relationship descriptions: "A relationship that lasts a short time (i.e., you have only one/a few romantic or sexual experiences) and is not an invested, committed relationship" (i.e., Low-Short), "A relationship that lasts a long time (i.e., you have many romantic or sexual experiences) yet is not an invested, committed relationship" (i.e., Low-Long), "A relationship that lasts a short time (i.e., you have only one/a few romantic or sexual experiences) yet is an invested, committed relationship" (i.e., High-Short), and "A relationship that lasts a long time (i.e., you have many romantic or sexual experiences) and is an invested, committed relationship" (i.e., High-Long). Participants completed a Relationship Selection measure by checking the boxes associated with the relationship

descriptions in which they had interest. Participants could check zero, one, or multiple of the boxes. Participants also rank ordered their interest in the four different relationship descriptions with respect to each confederate (i.e., "which relationship would you be most interested in having with the participant?").

The computer program informed the participants that they have been randomly selected to have "final say" in whether or not to exchange contact information with the confederate, but they had to wait for the confederate to finish the same ratings the participant had just completed. After approximately 30 seconds, the computer program indicated that the confederate was most interested in the relationship description which the participant had ranked third out of four. As a measure of Flexibility, participants then answered "yes" or "no" if they were interested enough in the displayed relationship to exchange contact information.

While the participant answered the Interaction and Attraction questions, the second confederate, posing as a participant, sat at a computer, having entered the questionnaire room during the first interaction, and appeared to complete some questionnaires; the confederate assigned to each task was counterbalanced. During this time, the experimenter left the room to "collect" the first confederate, leading him/her to another room to complete the Interaction and Attraction questionnaire. Approximately 3 minutes after the experimenter returned, the second confederate indicated to the experimenter he/she was ready for the next portion of the experiment, and the experimenter instructed him/her to wait. When the participant indicated he/she was

finished, the experimenter led the participant and second confederate to the interaction room.

The experimenter again explained the faux "purpose" of the experiment (i.e., testing different "get to know you" tasks), and the instructions for the task not completed with the first confederate (i.e., if they completed Picture Description with the first confederate, they would complete University Experiences second confederate and vice versa). The interaction took approximately five minutes, and then the experimenter returned participant to the questionnaire room to answer the Interaction and Attraction questionnaire about the interaction and his/her interest in the second confederate. After completing the questionnaire, the participant provided demographic information and completed a suspicion check. The experimenter then thoroughly debriefed and thanked the participant.

Measures

Participants completed a shortened version of the Experiences in Close Relationship Scale – Revised (ECR-R Short; Wei, Russell, Mallinckrodt, & Vogel, 2007), which includes six items that measure Attachment Anxiety (Cronbach's α=.76) and six items that measure Attachment Avoidance (α=.81). Participants also completed the Sociosexuality Inventory – Revised (SOI-R; α=.88; Penke & Asendorpf, 2008). The Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann Jr., 2003); the TIPI uses two items to assess Openness to New Experience (α=.54), two items to assess Conscientiousness (α=.31), two items to assess Extraversion (α=.57), two items to assess

Agreeableness (α=.40), and two items to assess Neuroticism (α=.68). These items were administered upon intake.

After each interaction, participants answered the Interaction and Attraction questionnaire about the interaction and their interest in the confederate. Participants rated their agreement on four items that serve as a manipulation check of confederate behavior in both the Picture Description and University Experiences tasks; two items assessed interest (i.e., "The other participant behaved in a flirtatious way," and "The other participant seemed interested in me;" α= .72) and two items assessed kindness (i.e., "The other participant was kind," and 'The other participant made me feel rejected;" α=.43). Four items assessed the participant's Desire for the confederate ("In your opinion, how attractive was the other participant," "How much did you like this person," and "How much would you like to go on a date with this person?"; Simpson, Gangestad, & Biek, 1993, and "How much would you like to have sex with this person;" Cronbach's α=.78). Then, participants rated their agreement with five, separate statements of Relationship Openness on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree). These items assessed how happy they would be in relationships with the confederate. One statement examined Short-Term Relationship Openness (i.e., "I would be happy in a relationship with this person that lasted a short time") one statement examined Long-Term Relationship Openness (i.e., "I would be happy in a romantic relationship with this person that lasted a long time"), one statement examined Low-Investment Relationship Openness (i.e., "I would be happy to be in a romantic relationship with this person in which I invested a little of myself"), one statement examined High-Investment Relationship Openness (i.e.,

"I would be happy to be in a romantic relationship with this person in which I invested a lot of myself"), and one statement examined Any Relationship Openness (i.e., "I am open to having any kind of relationship with this person"). Finally, participants rated their agreement to the prototypical items assessing Interest in Long-Term Relationships (i.e., "I would like to have a long-term, committed relationship with this person") and Interest in Short-Term Relationships (i.e., I would like to have a short-term relationship [e.g., a one-night stand or brief affair] with this person").

Participants provided their demographic information such as age, sex, race, relationship status, sexual orientation, and first generation college student status. If participants indicated they were in a relationship, they also provided the length of their relationships and rated their agreement to two statements that assess their commitment to their partners ("I feel very attached to my relationship with my partner – very strongly linked to my partner" and "I am very affected when things are not going well in my relationship with my partner"; Arriaga & Agnew, 2001). Finally, participants were asked to write down if they found anything "odd or strange" about the procedure and to explain what they may have found strange and when during the experimental procedure this occurred. Participants were removed from the analysis if they indicated suspicion about exchanging information or the use of confederates; nine participants in total were removed from the analyses.

RESULTS

Manipulation Check

Paired samples t-tests revealed that participants found the University Experiences confederate to show more interest, $t(117) = -3.87$, $p < .001$ than the Picture Description confederate. However, participants did not perceive a difference in kindness between the two conditions, $t(117) = -1.46$, $p = .146$. Participant sex did not interact with condition to predict perception of either confederate interest or kindness (all $ps > .446$).

Main Analyses

Descriptive statistics, by participant sex, can be found in Table 11. Study 4 first investigated the association between sociosexuality and desire; previous work found small positive associations between sociosexuality and desire for opposite-sex interaction partners (Asendorpf, Penke & Back, 2011; Simpson, Gangestad, & Biek, 1993). Results indicated a significant positive association for both the Picture Descriptions confederate, $r=.29$, $p=.001$, and the University Experiences confederate, $r=.21$, $p=.025$. That is, unrestricted individuals felt more desire for the confederates in both conditions than restricted individuals; these correlations did not significantly different from another, $z=.88$, $p=.378$.

Study 4 also assessed sociosexuality as a predictor of a participant's selection of relationships to pursue. Relationship Selection was measured by creating a sum of the number of relationships (out of four) the participant indicated he/she would be willing to pursue with each confederate. Though I expected that sociosexual orientation would

correlate positively with participants' Relationships Selection in both the Picture Description condition and the University Experiences condition, neither association was significant, $r = .15$, $p = .110$ and $r = .09$, $p = .318$. That is, unrestricted individuals did not select more relationships descriptions than restricted individuals, although both correlations were in the predicted direction. After restructuring the dataset to create two rows per participant (i.e., one row per condition), I examined if relationship selection differed as a function of condition with multi-level modeling using a Poisson structure. No interaction occurred between sociosexuality and condition, $F(1,232) = 0.21$, $p = .653$.

I also regressed participants' sociosexuality scores on the five items assessing Relationship Openness (i.e., time-orientation and investment) with each confederate. For the Picture Descriptions confederates, sociosexuality predicted agreement with the statements assessing Long-Term Relationship Openness, $\beta=.20$, $t(116)=2.18$, $p=.031$, and Short-Term Relationship Openness, $\beta=.33$, $t(116)=3.77$, $p<.001$. Sociosexuality also marginally predicted agreement with the statements assessing for High-Investment Relationship Openness, $\beta=.17$, $t(116)=1.80$, $p = .074$, and Low-Investment Relationship Openness, $\beta = .17$, $t(116) = 1.88$, $p = .062$, providing support for Pattern 3. For the University Experiences confederates, though, sociosexuality predicted agreement with the statements assessing Short-Term Relationship Openness, $\beta = .30$, $t(116) = 3.43$, $p = .001$ and Low-Investment Relationship Openness, $\beta = .24$, $t(116) = 2.60$, $p = .010$, but not Long-Term Relationship Openness, $\beta = .14$, $t(116) = 1.56$, $p = .121$ or High-Investment Relationship Openness, $\beta = .11$, $t(116) = 1.18$, $p = .241$; these betas were in the positive direction, though, supportive of Pattern 3 (i.e., openness to any relationship).

Sociosexuality significantly and positively predicted agreement with the Any Relationship Openness item for both Picture Description, $\beta = .36$, $t(116) = 4.10$, $p < .001$, and University Experiences confederates, $\beta = .25$, $t(116) = 2.79$, $p = .006$. Additionally, I assessed interest in short-term, long-term, low investment, and high investment relationships based on condition and sociosexual orientation using multi-level modeling. Previous research indicates that unrestricted individuals behave more flirtatiously than restricted individuals (Simpson et al., 1993) and that other individuals flirt more with unrestricted individuals than with restricted individuals (Back et al., 2011); therefore, I expected sociosexuality to promote more openness to relationships with confederates in the University Experiences condition than in the Picture Descriptions task. However, no significant interactions between condition and sociosexual orientation occurred for any of the relationship openness items (all $ps > .401$). As well, no significant interaction of participant sex and sociosexual orientation occurred to predict any of the relationship openness items (all $ps > .152$).

I also regressed participants' sociosexuality scores on their agreement with the prototypical long-term and short-term relationship interest variables. Sociosexuality did not predict interest in either long-term or short-term relationships for the Picture Description confederates, $\beta = -.05$, $t(116) = -0.55$, $p = .582$ and $\beta = .10$, $t(116) = 1.08$, $p = .284$, respectively. Sociosexuality did not predict interest in long-term relationships with the University Experiences confederate, $\beta = -.06$, $t(116) = -0.67$, $p = .503$, but it did significantly predict interest in a short-term relationship with the University Experiences confederate, $\beta = .24$, $t(116) = 2.70$, $p = .008$. Additionally, participant sex did not interact

with sociosexual orientation to predict the prototypical relationship interest variables for either condition (all ps > .232).

Finally, plasticity was measured by whether or not the participant agreed to exchange contact information with the confederate after being told that the confederate was interested in pursuing the relationship type that the participant ranked third. As the Flexibility score was binary (i.e., yes or no), I used logistic regression using participants' standardized sociosexuality scores to predict their plasticity score for both confederates. A test of the full model against a constant model was statistically significant, indicating that sociosexuality reliably predicted who wanted to exchange contact information with the Picture Description confederate ($\chi 2 = 11.08$, b = .89, Exp b = 2.43, p = .001 with df = 1) and who wanted to exchange contact information with the University Experiences confederate ($\chi 2 = 12.37$, b = .87, Exp b = 2.38, p = .001 with df=1). That is unrestricted individuals were more likely than restricted individuals to want to exchange contact information with a confederate who wanted to pursue a relationship ranked lower by the participant. However, when controlling for sex, the effect of sociosexuality on willingness to exchange contact information drops to non-significance, but only for the Picture Description confederate ($\chi 2=16.08$, b=.49, Exp b=1.63, p=.167 with df=1).

Additionally, as an exploratory analysis, I re-ran the logistic regressions of sociosexuality on plasticity scores after limiting the data set to those who ranked the High Investment, Long-Term relationship third (i.e., they were presented with the choice to pursue a High-Long relationship). If sociosexuality promotes pursuit of short-term or low investment relationships (Patterns 1 or 2), unrestricted individuals would be especially

unlikely to agree to exchange information with a confederate who wishes to pursue a High-Long relationship. If, however, sociosexuality promotes plasticity in relationship pursuit, unrestricted individuals will be especially likely to agree to exchange information with a confederate who wishes to pursue a High-Long relationship. Again, the full test against a constant model was statistically significant indicating that sociosexuality reliably predicted who wanted to exchange contact information with the Picture Description confederate interested in a High Investment, Long-Term relationship ($\chi 2$ = 6.90, b = 1.49, Exp b = 4.45 p = .009 with df = 1) and who wanted to exchange contact information with the University Experiences confederate interested in a High Investment, Long-Term relationship ($\chi 2$ = 10.46, b = 3.63, Exp b = 37.63 p = .001 with df = 1). In both cases, unrestricted sociosexuality predicted willingness to exchange information with a confederate who wanted to pursue a High-Long relationship.

Subsidiary Analyses

I also ran correlational analyses among the individual difference measures (i.e., SOI, TIPI, and ECR). Results are presented in Table 12. Of note, sociosexuality was significantly positively associated with self-reported Avoidance, r=.20, p=.034, and agreeableness, r=.30, p=.001; that is, unrestricted individuals rate themselves as more avoidant and agreeable than restricted individuals. However, sociosexuality was not associated with any other individual difference measure.

DISCUSSION

Study 4 provides two new pieces of evidence to support that sociosexuality predicts openness to any relationship (i.e., Pattern 3) as opposed to relationships defined by a particular length of time or level of investment (i.e., Patterns 1 or 2). First, unrestricted individuals self-reported more openness to relationships characterized by a short-term and long-term orientation as well as low and high amounts of investment than restricted individuals; additionally unrestricted participants self-reported more openness to any kind of relationship than restricted participants. Second, Study 4 provided behavioral evidence to support sociosexuality as a measure of mating strategy flexibility. Unrestricted individuals were more willing than restricted individuals to exchange contact information with confederates in order to pursue a relationship that the participant had ranked as less appealing.

General Discussion

This research has contributed to our understanding of sociosexuality by considering the ability to project oneself into the future (i.e., time) separately from the kinds of investments one makes in a relationship. First, unrestricted individuals are more likely than restricted individuals to endorse and report more frequent experiences with relationships characterized by a high or low amount of investment as well as a short-term or long-term orientation (Studies 2 and 3); that is, unrestricted individuals do not show an exclusive preference for a relationship defined by either short-term or low-investment strategies (i.e., Patterns 1 and 2), but a willingness to pursue relationships more generally (i.e, Pattern 3). This research also found that unrestricted individuals self-report more openness to relationships of any description than restricted individuals, further supporting Pattern 3 (Study 4). Moreover, unrestricted individuals were more willing than restricted individuals to pursue a relationship with a confederate that was ranked less appealing than other relationships; that is, unrestricted individuals not only report more openness to different relationships, but show more flexibility in their pursuit of relationships than restricted individuals (Study 4). Furthermore, single, unrestricted individuals seem to be oriented toward the future of potential relationships while still expecting to invest very little in a partner compared to single, restricted individuals. Additionally, results indicated that time and investment contribute separately to how individuals feel about relationships (Studies 2 and 3); that is, effect sizes indicated that both the time and investment manipulations contributed separately to the evaluations and endorsement of

the different relationship descriptions. Finally, single individuals reported that the future of relationships (i.e., time) is only somewhat associated with investments in a partner, whereas those in relationships reported that the future of a relationship is highly linked to the investments in a partner (Study 1).Taken together, these studies broaden our understanding of sociosexuality's role in relationship pursuit, especially when considering the future of a relationship (i.e., time) separately from the resources committed to a relationship (i.e., investment).

THE PURSUIT OF ANY RELATIONSHIP

This work largely supported the notion that unrestricted individuals are more likely to pursue relationships oriented toward the immediate and distant future (i.e., short-term vs. long-term) as well as relationships of little and great investment (i.e., low or high investment); that is, these results indicate a more general relationship pursuit, in support of Pattern 3. Though these relationships were artificially manipulated to evince different time and investment orientations, unrestricted participants in Studies 2 and 3 were more likely to report experience with each relationship description than restricted individuals. Moreover, endorsement of these relationships was correlated with a more unrestricted sociosexual orientation rather than a restricted orientation. If Patterns 1 or 2 were more likely, sociosexual orientation should have been negatively correlated with relationships that were manipulated to evince longer-term relationships (i.e., High-Long or Low-Long relationships) or relationships that were manipulated to evince higher amounts of investment (i.e., High-Long or High-Short relationships). Consistently across studies,

though, unrestricted participants reported being interested in high investment, low investment, short-term, and long-term relationships more so than restricted participants; that is, unrestricted sociosexual orientation is associated with pursuit of any relationship.

Additionally, these results are supportive of sociosexuality as a predictor of mating flexibility, indirectly supporting the assertion that sociosexuality predicts pursuit of any relationship (i.e., Pattern 3). Study 4 revealed behavioral evidence that unrestricted individuals are more likely to pursue a less desired relationship than restricted individuals. Unrestricted individuals were more willing to exchange contact information (i.e., pursue a relationship) despite the potential partner signifying they hoped to pursue a relationship different from the one that the participant preferred. This indication of mating flexibility may explain why previous research has found that unrestricted individuals report more long-term relationships as well as short-term relationships (Penke & Asendorpf, 2008), but subsequently report lower satisfaction (Webster et al., 2015) and more perceived acceptability of infidelity (Feldman & Cauffman, 1999). That is, unrestricted individuals enter "less than ideal" relationships but view alternatives as more attractive, creating a recipe for dissolution, and the mediational analyses conducted in Study 1 lend some evidence to support this more distal pathway to relationship.

Mating flexibility may have been important for humans in ancestral environments. If constraints on mating ever changed rapidly (e.g., a war causing a sudden gender imbalance or the defeat of nearby predators increasing life expectancy), the ability to change one's mating strategy may have made certain individuals more likely to reproduce. Experience with several mating strategies and the ability to pursue multiple

mating strategies may have opened up new pools of potential mates and increased an individual's actual number of mateships. Individuals with unrestricted sociosexuality may have had their eyes on mating opportunities wherever they were available (i.e., long or short, low or high investment) in ancestral environments, and perhaps when the mating landscape shifted, unrestricted individuals were more likely than restricted individuals to shift with it.

IN SUPPORT OF A TIME AND INVESTMENT DISTINCTION

Additionally, this work suggests that time orientation and investment orientation may be distinguishable constructs for those considering potential relationships (i.e., a new relationship or rekindling a previous relationship) but nearly identical constructs for those currently in relationships. For those considering a potential relationship (i.e., single individuals), the future of a relationship is less associated with the amount of resources they may commit to a relationship than for those currently in a relationship. Moreover, when manipulated, results indicated that both time and investment contributed separately to how participants evaluated relationships on a number of important relationship centered variables (e.g., satisfaction). This is an important contribution to the relationship initiation literature, as it implies that individuals' mating intentions may not fall along a simple bipolar dimension (i.e., short vs. long-term). Study 1 also indicated that unrestricted individuals are oriented toward continual sexual interactions in the future (i.e., a positive correlation of SOI and time orientation) but without the intent of

committing resources to the person (i.e., a negative correlation of SOI and investment orientation).

LIMITATIONS

This research did suffer from a few limitations. Sociosexuality was measured using different, albeit accepted, inventories, and consistency in measurement would allow for a stronger argument to reevaluate the construct. Study 2 relied primarily on sociosexual attitudes (which typically remain constant over time; Penke & Asendorpf, 2008), whereas Studies 1, 3, and 4 used the full SOI-R. However, the items in the SOI and SOI-R are very similar, and both inventories generated a similar pattern of results across all four studies.

Also, some participants in Study 2 evaluated previous partners, varying in termination dates from recent to further in the past. Though the manipulation demonstrated time and investment's independent contribution to the evaluations, these relationships were assessed in retrospect. Explicitly comparing the evaluations of current relationships and recently terminated relationships may highlight changes in the contribution of time and investment to the experience of a relationship. Moreover, following relationships longitudinally may make clearer when time and investment become more highly correlated to one another.

Study 3 asked participants to nominate individuals and categorize them based on the descriptions in Study 2. Results indicated, surprisingly, that individuals with restricted sociosexual orientations were more likely to assign an individual to the Low-

Short relationship description than individuals with unrestricted sociosexual orientations. This is unexpected as this might indicate that restricted people prefer low investment, short-term relationships. However, given the vast number of nominations made, restricted individuals may not be indicating more interest in one-night, low investment affairs, but actually indicating that they do not necessarily see this person as a viable romantic partner. Selecting this answer, therefore, would indicate a quick and convenient end to whatever relationship the participant had imagined. However, Study 3 did not possess measures to directly test this possible explanation.

Additionally, Study 4 had a number of limitations. It recruited both single individuals and individuals currently in relationships. Given this focus on potential relationships, Study 4 examines the possibility of mating initiation for non-partnered participants, but the possibility of infidelity for those individuals currently in relationships. Though previous work (Schmitt, 2005) has demonstrated that unrestricted individuals feel less investment in current partners, Study 4 was not specifically designed to examine the possibility of extra-dyadic relationship pursuit. This study may have benefited from the inclusion of only single individuals who may have more interest in meeting a potential partner than those currently in a romantic relationship.

Study 4 may also have been hampered by confederate race. That is, some participants interacted with confederates who were not of their same race. However, recent research into a bias for same race attraction found that there was no consistent evidence to suggest such a bias existed (Burke, Nola, Hayward, Russel, & Sulikowski, 2013). Though interracial marriage rates may be low, lack of preference for one's own

race suggests that this may have accounted for a small amount of variance in the results of Study 4. As well, Study 4 had a more diverse sample than Studies 1-3, and, so, homogenizing confederate race may have created similar limitations.

Additionally, Study 4 utilized deception, and participants were unaware they would be making romantic evaluations or even interacting with potential romantic partners. This experimental context does not necessarily replicate a real life mating context where individuals are aware and actively pursuing mates. As well, Study 4 did not assess participants' general mating motivations outside of their sociosexuality. Understanding more about the participants' mating motivations (e.g., sexual novelty seeking, desire for a mate) may have provided useful controls for the assessment of the association of sociosexuality with relationship openness as well as mating flexibility. It is also possible that measures of mating strategies (e.g., assessing participants' life history strategy) may have provided useful tests of convergent validity concerning sociosexuality's openness to multiple mating strategies. However, traditional measures of mating strategies, as discussed in the Background, tend to conflate time and investment, and thus may have only muddied the waters this research attempted to clear.

FUTURE DIRECTIONS

Despite these limitations, this research opens the door for a new, generative understanding of sociosexuality. First and foremost, sociosexuality as openness to relationships and increased mating flexibility should be replicated in actual mating contexts. For example, speed-dating may provide for an real-world test of willingness to

pursue relationships varying in their time and investment orientations. It would also be informative to see the manner in which unrestricted individuals seek new relationships (e.g., traditional matchmaking, "hook up" applications like Tinder, or even more long-term oriented dating websites like eHarmony.com) as compared to the manner of mating sought by restricted individuals. These data may provide support that unrestricted individuals are more likely than restricted individuals to pursue several mating strategies simultaneously and accept available relationships even when it differs from a stated mateship ideal.

Additionally, this research highlights an interesting distinction between the correlation of time and investment for those considering potential relationships and those currently engaging in committed relationships. Not only does the correlation between the two orientations drop precipitously for those considering potential relationships, but also unrestricted individuals are actually more oriented toward the future of potential relationships than restricted individuals. Moreover, future researchers should investigate why unrestricted sociosexuality ceases to project the relationship into the future once a relationship has become established (i.e., why does the association of sociosexuality and time orientation become null in a romantic relationship). As well, given that time and investment orientations are highly correlated in established relationships, future research should examine if a person currently in a relationship can report experiencing time and investment in such a way that researchers would identify the relationship as a High-Short or Low-Long relationship. If so, future research should attempt to capture these relationships and their outcomes while examining how lay persons categorize or define

these events (e.g., “Friends with Benefits” or “Sex Buddies;” Gusarova, Fraser, & Alderson, 2012).

This research focused primarily on potential relationships; however, it provided evidence that psychological attachment, satisfaction, and quality of alternatives each independently mediate the negative association of sociosexuality and commitment for participants in established relationships. I concur with other researchers who have called for more research on sociosexuality’s role in committed relationship processes (Simpson, Wilson, & Winterheld, 2004). What relationship processes, for example, might increase an unrestricted individual’s level of commitment and decreasing the subsequent likelihood of relationship termination? Similarly, future research might consider how the transition to a monogamous relationship transforms mating effort to parenting effort.

Future work should also attempt to identify both individual and dyadic processes that contribute to infidelity and how sociosexuality affects those processes. As an individual difference measure, sociosexuality has not been explored as a dyadic characteristic. Future work may find that couples who have similar sociosexual orientations may fare better than those couples who have disparate levels of sociosexuality. Other work should examine how partners who both have unrestricted sociosexual orientation negotiate High-Long relationships given the negative correlation of sociosexuality with investment orientation and more permissive attitudes toward infidelity. Future work should also examine how a measure of sociosexual orientation similarity might predict relationship satisfaction and even examine for a possible connection to the rise in visibility of polyamorous and “open” relationships.

Finally, future work should examine the association of sociosexuality and relationship pursuit across the lifespan. Though sociosexuality is posited to remain stable across time (particularly sociosexual attitudes; Penke & Asendorpf, 2008), different periods of life may be marked by different motivations to seek mates. Specifically, research in socioemotional selectivity theory (Carstensen, 1992) finds that older adults focus more effort on increasing meaning and less on broadening horizons (Carstensen, Fung, & Charles, 2003). This may indicate that individuals' interest in highly invested relationships increases over the course of the lifespan. Additionally, others have noted that over eighty percent of individuals aged 50-80 are sexually active (Lochlainn & Kenny, 2013) and that sexual desire does not decrease over time (Kontula & Haavio-Mannila, 2009). Integrating these findings into work considering the relationship pursuit and sexual development of aging populations may provide interesting new insights into the mating pursuits of older adults. That is, future research should examine the interactive effects of aging and sociosexuality on mating pursuits.

CONCLUSION

This research paints a broader picture of how sociosexuality relates to mating pursuit. These results suggest we are only beginning to see the full scope of its influence on the landscape of human mating. Further research should build upon this understanding of openness and flexibility to find the bounds of mating possibilities for those across the sociosexual orientation spectrum. As well, this research has put forth a unique understanding of time and investment orientation regarding potential relationships.

Though considered nearly identical to those in established relationships, time and investment orientations correlate less with other for those considering the potential partners. Taken together, these findings demonstrate an added layer of complexity concerning sociosexuality, a reliable predictor of relationship pursuit, and add to our collective knowledge of human mating psychology.

Appendix A: Footnotes

1 These analyses were also run removing nominations of individuals who the participant identified as a current sexual or romantic partner. The pattern of results remained across all relationship descriptions: sociosexuality significantly predicts the nomination of targets to the High-Long, β=.16, $t(223)$= 2.40, p=.017, High-Short, β= .25, $t(223)$= 3.78, $p < .001$, Low-Long, β= .33, $t(223)$= 5.17, $p < .001$, and Low-Short, β= -.45, $t(223)$= -7.58, $p < .001$, relationship descriptions.

Appendix B: Tables

Table 1.

Time Orientation Scale

Please rate your agreement to these statements on the following scale

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Disagree	Agree	Strongly Agree

1. I want to have many more sexual experiences in the future with [Partner's Name].
2. I expect to have many more sexual experiences in the future with [Partner's Name].
3. When I think about the future (i.e., more than a year from now), I am still having a sexual relationship with [Partner's Name].
4. I don't think my sexual relationship with [Partner's Name] will continue very long. (reverse scored)
5. [Partner's Name] is not someone with whom I want to keep having a sexual relationship into the future. (reverse scored)
6. When I consider plans for my long-term future (i.e., more than a year from now), I make sure my plans include continuing sexual experiences with [Partner's Name].
7. My future does not include continuing the sexual relationship I have with [Partner's Name]. (reverse scored)
8. I really only think about my sexual relationship with [Partner's Name] in the "here and now." (reverse scored)
9. I want my future to include sexual experiences with [Partner's Name].
10. My sexual relationship with [Partner's Name] could be described as a "place-holder" (i.e., it is not permanent). (reverse scored)
11. I have no intention of having any more sexual experiences with [Partner's Name]. (reverse scored).
12. Even if I wanted it to continue, my sexual relationship with [Partner's Name] will end sooner rather than later.
13. I want to continue my sexual relationship with [Partner's Name] for many more years.

Table 1 (cont.)

Investment Orientation Scale

Please rate your agreement to these statements on the following scale

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Disagree	Agree	Strongly Agree

1. I want to invest myself romantically (e.g., my emotions and resources) in this sexual relationship.
2. I expect to invest myself romantically (e.g., my emotions and resources) in this sexual relationship.
3. I expect my resources (e.g., money, assets, energy) to be shared in this sexual relationship.
4. My resources (e.g., money, assets, energy) are mine, and [Partner's Name] is only getting what I want him/her to have. (reverse)
5. My emotions don't really factor into my sexual relationship with [Partner's Name]. (reverse)
6. My relationship with [Partner's Name] is characterized only by sex – not by emotions or personal investment (e.g., money, assets, energy). (reverse)
7. I want more in my relationship with [Partner's Name] beyond our sexual experiences.
8. My sexual relationship with [Partner's Name] is characterized by me sharing my emotions as well as my resources (e.g., money, assets, energy).
9. I want [Partner's Name] to feel like what is mine is his/hers.
10. Apart from sex, I expect to share nothing with [Partner's Name]. (reverse)
11. My sexual relationship with [Partner's Name] is built upon sharing our emotions and resources.
12. I want to share my emotions and my resources (e.g., money, assets, energy) with [Partner's Name].
13. I want to direct my energy and resources to the benefit of my sexual relationship with [Partner's Name].

Table 2.

Study 1 descriptive statistics

	SOI	Time Orientation	Investment Orientation	Psychological Attachment	Long-Term Orientation	Intent to Persist	Satisfaction	Quality of Alternatives	Size of Investment	Commitment
Males										
M	4.48	5.47	5.33	5.22	5.27	5.43	5.37	3.96	4.96	4.94
SD	1.76	1.52	1.52	1.29	1.47	1.72	1.42	1.61	1.73	1.39
Females										
M	2.95	5.18	5.29	5.2	4.97	5.32	4.95	3.84	4.51	4.85
SD	1.44	1.88	1.53	1.42	1.64	2.03	1.78	1.64	1.80	1.50

Table 3.

Correlation of sociosexual orientation inventory with relationship-centered variables

	SOI	Time Orientation	Investment Orientation	Psychological Attachment	Long-Term Orientation	Intent to Persist	Satisfaction	Quality of Alternatives	Size of Investment	Commitment
SOI	-	.34**	-.29**	.04	-.10	-.06	.19†	.15	-.11	.00
Time Orientation	-.11	-	.29**	.41***	.52***	.60***	.59***	-.27*	.69***	.62***
Investment Orientation	-.19**	.82***	-	.50***	.62***	.59***	.39***	-.29**	.69***	.61***
Psychological Attachment	-.17*	.72***	.72***	-	.36***	.53***	.55***	-.13	.62***	.59***
Long-Term Orientation	-.08	.69***	.69***	.72***	-	.67***	.32**	-.27*	.53***	.58***
Intent to Persist	-.10	.80***	.71***	.72***	0.72***	-	.46***	-.27*	.58***	.68***
Satisfaction	-.16*	.56***	.42***	.44***	.46***	.56***	-	-.15	.52***	.65***
Quality of Alternatives	.30***	-.42***	-.48***	-.47***	-.47***	-.38***	-.28***	-	-.29**	-.25*
Size of Investment	-.07	.51***	.56***	.60***	.58***	.48***	.43***	-.37***	-	.72***
Commitment	-.18**	.82***	.73***	.74***	73***	.76***	.56***	-.38***	.64***	-

Note. Participants in relationships' coefficients below the diagonal, while single participants' coefficients are above the diagonal
† - Marginally significant at $p<.10$
* - Significant at $p<.05$
* *- Significant at $p<.01$
*** - Significant at $p<.001$

Table 4.

Mediational effects of relationship health variables on the association between sociosexuality and commitment

	Point Estimate of Indirect Effect	*SE*	95% CI	
			Lower	Upper
Psychological Attachment	-.07	.03	-.1316	-.0190
Long-Term Orientation	-.04	-.03	-.0847	.0215
Intent to Persist	-.04	.03	-.1065	.0131
Satisfaction	-.05	.02	-.1045	-.0185
Quality of Alternatives	-.06	.02	-.1040	-.0346
Size of Investment	-.03	.03	-.0784	.0202

Table 5.

Study 2 descriptive statistics

		High Long Relationships					
	SOI	Frequency	Endorsement	Desire	Attachment Bond	Commitment	Satisfaction
Males							
M	2.79	1.52	3.65	5.48	5.18	5.35	5.55
SD	1.82	1.00	1.37	1.33	1.49	.99	1.35
Females							
M	2.36	1.80	3.39	5.77	5.45	5.37	5.62
SD	1.70	1.57	1.48	1.28	1.40	1.00	1.22

	High Short Relationships					
	Frequency	Endorsement	Desire	Attachment Bond	Commitment	Satisfaction
Males						
M	1.91	4.95	4.14	3.96	4.22	3.99
SD	1.44	1.40	1.54	1.67	1.17	1.52
Females						
M	2.10	5.09	4.18	4.03	4.27	3.90
SD	1.61	1.39	1.45	1.53	1.19	1.49

	Low Long Relationships					
	Frequency	Endorsement	Desire	Attachment Bond	Commitment	Satisfaction
Males						
M	2.47	3.57	3.40	2.97	3.56	3.35
SD	1.89	1.67	1.43	1.55	1.26	1.56
Females						
M	2.17	3.25	3.36	3.16	3.64	3.34
SD	1.96	1.76	1.66	1.68	1.27	1.75

	Low Short Relationships					
	Frequency	Endorsement	Desire	Attachment Bond	Commitment	Satisfaction
Males						
M	2.15	2.69	2.42	2.48	3.19	2.76
SD	1.90	1.47	1.29	1.40	1.14	1.42
Females						
M	2.58	2.26	2.26	2.38	3.03	2.47
SD	5.11	1.55	1.61	1.70	1.27	1.59

Table 6.

Correlations of sociosexuality with endorsement of relationship descriptions and the number of relationships reported

	High-Long	High-Short	Low-Long	Low-Short
Study 2				
Endorsement	.10[a]	.17*[b]	.43***[c]	.36***[c]
Incidence	.16**[a]	.16*[a]	.37*[b]	.16*[a]
Frequency	.22***[a]	.11*[a]	.56***[b]	.34***[a]
Study 3				
Endorsement	.19**[a]	.25***[a]	.57***[b]	.15*[a]
Incidence	.09[a]	.17**[a]	.48***[b]	.25***[a]
Frequency	.35***[a,b]	.23**[a]	.30***[a]	.36***[b]

Note. *** $p <$ .001 ** $p <$ .01 * $p <$ .05

Different superscripts within a row indicate differences between correlations at $p <$ .05

Table 7.

Fixed effects for endorsement and romantic evaluation variables

	High-Long	High-Short	Low-Long	Low-Short	Effect Sizes (Cohen's *d*)	
					Investment	Time-Orientation
Study 2						
Endorsement	5.33[a]	3.50[b]	3.39[b]	2.48[c]	.58	.53
Desire	5.67[a]	4.17[b]	3.37[c]	2.33[d]	.88	.53
Attachment	5.36[a]	4.00[b]	3.07[c]	2.44[d]	.81	.42
Bond						
Commitment	5.36[a]	4.24[b]	3.59[c]	3.11[d]	.80	.44
Satisfaction	5.60[a]	3.93[b]	3.35[c]	2.62[d]	.74	.50
Study 3						
Endorsement	5.36[a]	2.67[b]	2.90[c]	2.97[c]	.56	.69

Note. Evaluations were made on a scale form 1 (*Strongly Disagree*) to 7 (*Strongly Agree*)

Different superscripts within a row indicate differences between means at $p<.05$

Table 8.

Study 3 descriptive statistics

	SOI	High-Long Relationships						
		Frequency	Endorsement	Number Nominated	Desire	Attachment Bond	Commitment	Satisfaction
Males								
M	4.50	4.27	5.30	1.01	5.90	4.48	4.93	5.12
SD	1.85	7.41	1.41	1.05	1.48	1.96	2.01	1.67
Females								
M	3.05	3.47	5.41	.82	6.33	5.25	5.79	5.58
SD	1.52	9.05	1.37	.73	1.18	1.94	1.68	1.68

	High-Short Relationships						
	Frequency	Endorsement	Number Nominated	Desire	Attachment Bond	Commitment	Satisfaction
Males							
M	3.07	3.06	1.07	4.84	3.56	3.70	4.18
SD	10.52	1.64	1.21	1.52	1.42	1.65	1.43
Females							
M	1.13	1.56	.55	4.22	3.24	3.17	3.90
SD	2.38	1.55	.89	1.56	1.40	1.78	1.38

	Low-Long Relationships						
	Frequency	Endorsement	Number Nominated	Desire	Attachment Bond	Commitment	Satisfaction
Males							
M	6.25	3.53	.65	3.83	3.44	3.30	4.46
SD	24.03	1.94	1.05	1.30	1.45	1.56	1.55
Females							
M	2.5	2.40	.29	3.68	3.73	3.58	4.31
SD	9.40	1.69	.69	1.72	1.71	1.75	1.57

	Low-Short Relationships						
	Frequency	Endorsement	Number Nominated	Desire	Attachment Bond	Commitment	Satisfaction
Males							
M	8.67	3.35	2.24	1.96	3.18	2.95	3.85
SD	20.61	1.87	1.57	1.34	1.30	1.61	1.51
Females							
M	4.06	10.08	3.34	1.39	3.44	3.06	4.26
SD	2.68	1.68	1.30	.92	1.45	1.85	1.50

Table 9.

Regression results of sociosexuality predicting the number of targets assigned to each category.

	B	SE (*B*)	*β*	t	Sig. (*p*)	-1 SD	+1 SD
High-Long	.10	.03	.11	1.68	.094	.81	1.00
High-Short	.29	.04	.27	4.16	<.001	.49	1.07
Low-Long	.32	.03	.36	5.73	<.001	.13	.76
Low-Short	-.71	.05	-.47	-7.88	<.001	3.57	2.15

Note. The +/- 1 SD column signifies the number of individuals nominated to each category within one standard deviation of the mean

Table 10.

Fixed effects of time and investment on relationship evaluation variables

	Desire			Attachment Bond			Commitment			Satisfaction		
Predictor	*b*	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Multilevel Model												
Time	2.15	.14	< .001	.36	.16	.023	1.94	.16	<.001	.51	.15	.001
Investment	2.87	.11	<.001	.27	.13	.032	.64	.14	<.001	.21	.12	.086
Time × Investment	-.49	.19	.009	1.18	.22	<.001	1.18	.24	<.001	.72	.21	.001
Simple Effects of Time												
When Investment is low	2.64	.30	<.001	-.81	.36	.023	.76	.18	<.001	-.22	.34	.526
When Investment is high	1.66	.12	<.001	1.54	.14	<.001	1.94	.16	<.001	1.23	.14	<.001
Simple Effects of Investment												
Short-Term Orientation	3.36	.26	< .001	-.91	.22	<.001	-.53	.35	.126	-.52	.30	.083
Long-Term Orientation	2.38	.15	< .001	1.45	.17	<.001	1.82	.19	<.001	.93	.17	<.001

Table 11.

Study 4 descriptive statistics

	Picture Description Confederate							
	Desire	Long-Term Openness	Short-Term Openness	High Investment Openness	Low-Investment Openness	Any Relationship Openness	Evolutionary Long-Term Interest	Evolutionary Short-Term Interest
Males								
M	3.00	2.73	3.07	2.33	2.70	3.87	2.38	2.50
SD	.99	1.34	1.78	1.24	1.29	1.55	1.31	1.51
Females								
M	2.35	2.32	2.26	2.00	2.25	2.86	1.98	1.54
SD	.96	1.33	3.32	1.06	1.35	1.60	1.21	.86

	University Experiences Confederate							
	Desire	Long-Term Openness	Short-Term Openness	High Investment Openness	Low-Investment Openness	Any Relationship Openness	Evolutionary Long-Term Interest	Evolutionary Short-Term Interest
Males								
M	3.37	3.03	3.33	3.07	3.03	4.20	2.50	3.38
SD	1.15	1.67	1.81	1.78	1.45	1.63	1.59	1.89
Females								
M	2.76	2.54	2.45	2.45	2.41	3.41	2.39	1.69
SD	1.03	1.49	1.41	1.56	1.42	1.92	1.49	1.10

	SOI	Anxiety	Avoidance	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Males								
M	4.36	3.34	3.47	5.17	5.50	4.18	3.67	2.77
SD	1.67	1.19	1.19	1.04	10.9	1.42	1.07	1.28
Females								
M	2.34	2.53	3.92	5.29	5.75	4.67	2.77	3.33
SD	.99	.93	1.03	1.29	1.02	1.35	1.67	1.38

Table 12.

Correlation of sociosexuality, attachment, and Big Five personality inventories

	SOI	Anxiety	Avoidance	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
SOI	-							
Anxiety	-.10	-						
Avoidance	.16†	-.11	-					
Openness	.06	-.11	-.26**	-				
Conscientiousness	.12	-.12	-.16†	.33***	-			
Extraversion	-.06	-.05	-.28**	.28**	.15	-		
Agreeableness	.30**	-.06	.25**	-.12	-.24*	-.07	-	
Neuroticism	-.03	.41**	-.03*	-.26**	-.26**	-.13	.19*	-

Table 13

Multinomial Logistic Regression Predicting Assignment to Description by Sociosexuality

Target 1

Reference Group	High-Long		High-Short		Low-Long		Low-Short	
	b(SE)	OR	*b(SE)*	OR	*b(SE)*	OR	*b(SE)*	OR
High-Short	-.32† (.17)	.73	N/A	N/A	-.10 (.17)	.91	-.30(.11)	.74**
Low-Long	-.22(.20)	.80	.10(.17)	1.10	N/A	N/A	-.21(.15)	.81
Low-Short	-.01(.16)	1.23	.30(.11)	.99	.21(.15)	1.36***	N/A	N/A

Target 2

Reference Group	High-Long		High-Short		Low-Long		Low-Short	
	b(SE)	OR	*b(SE)*	OR	*b(SE)*	OR	*b(SE)*	OR
High-Short	-.54(.19)	.58**	N/A	N/A	-.50(.22)	.61*	-.38(.18)	.68*
Low-Long	-.04(.19)	.96	.50(.22)	1.65*	N/A	N/A	.12(.17)	1.13
Low-Short	.01(.19)	1.01	.05(.15)	1.05	.71(.22)	2.04***	N/A	N/A

Target 3

Reference Group	High-Long		High-Short		Low-Long		Low-Short	
	b(SE)	OR	*b(SE)*	OR	*b(SE)*	OR	*b(SE)*	OR
High-Short	-.43(.22)	.65*	N/A	N/A	-.15(.26)	.86	-.17(.19)	.84
Low-Long	-.28(.24)	.76	.15(.26)	1.16	N/A	N/A	-.02(.21)	.98
Low-Short	.12(.19)	1.13	.26(.18)	1.30	.49(.22)	1.64**	N/A	N/A

Target 4

Reference Group	High-Long		High-Short		Low-Long		Low-Short	
	b(SE)	OR	*b(SE)*	OR	*b(SE)*	OR	*b(SE)*	OR
High-Short	-.45(.22)	.64*	N/A	N/A	-.17(.23)	.85	-.17(.19)	.84
Low-Long	-.28(.24)	.75	.19(.23)	1.18	N/A	N/A	-.01(.19)	.99
Low-Short	.14(.16)	.87	-.26(.20)	.77	.24(.19)	1.28	N/A	N/A

Target 5

Reference Group	High-Long		High-Short		Low-Long		Low-Short	
	b(SE)	OR	*b(SE)*	OR	*b(SE)*	OR	*b(SE)*	OR
High-Short	-.65(.24)	.52**	N/A	N/A	-.10(.24)	.90	-.28(.19)	.76
Low-Long	-.55(.24)	.58*	.10(.67)	1.11	N/A	N/A	-.18(.20)	.84
Low-Short	-.41(.24)	.66†	-.16(.17)	1.17	.42(.21)	1.52***	N/A	N/A

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